

1983

Virginia Commonwealth University Graduate Bulletin

Virginia Commonwealth University

Follow this and additional works at: <http://scholarscompass.vcu.edu/vcubulletins>

© Virginia Commonwealth University

Downloaded from

<http://scholarscompass.vcu.edu/vcubulletins/87>

This Bulletin is brought to you for free and open access by the VCU University Archives at VCU Scholars Compass. It has been accepted for inclusion in VCU Bulletins by an authorized administrator of VCU Scholars Compass. For more information, please contact libcompass@vcu.edu.

1983-84
GRADUATE
BULLETIN

Virginia Commonwealth University
Richmond, Virginia



Virginia Commonwealth University Graduate Bulletin

1983-1984



Volume LVIII

June 1983

Number 3

Table of Contents

University Calendar	iii
Part	
I Virginia Commonwealth University	1
II College of Humanities and Sciences	23
III School of Allied Health Professions	53
IV School of the Arts	82
V School of Basic Sciences	112
VI School of Business	134
VII School of Community and Public Affairs	156
VIII School of Education	192
IX School of Nursing	226
X School of Pharmacy	236
XI School of Social Work	242
XII Interdisciplinary and Cooperatively Offered Graduate Degrees	270
XIII Board, Administration, and Faculty	282
Index	292
Privacy Rights of Parents and Students	294
Campus Maps	Inside back cover

The Board of Visitors, the administration, and the faculty of Virginia Commonwealth University are committed to a policy of equal opportunity in education without regard to race, creed, sex, national origin, age, or physical handicap.

LIMITATIONS ON BULLETIN PROVISIONS

All rules and regulations set forth in this bulletin will apply until further notice. The university reserves the right to make changes in courses of study, fees, rules, and regulations governing the conduct of the work in all schools and programs, faculty and staff, and classification of students whenever university authorities deem it expedient or wise to do so.

1983–1984 University Calendar

1983

July

- 8 —Last day for summer degree candidates to submit graduation applications to their advisors for August degrees

August

- 8 —Final date for oral defense of graduate theses for August completion of degrees
 12 —Summer sessions end
 20 —Official date of August diploma
 22-24 —MCV orientation and registration
 22-26 —Orientation and advising for all day students—Academic Campus
 23 —Faculty meeting at 8:30 am—Academic Campus
 —Faculty meeting at 3:30 pm—MCV Campus
 23-24 —Evening studies registration
 24-26 —Registration for all day students—Academic Campus
 25 —Classes begin at 8 am—MCV Campus
 25-Sept. 2—Add/drop and late registration—MCV Campus
 29 —Classes begin at 8 am—Academic Campus
 29-Sept. 2—Add/drop and late registration—Academic Campus

September

- 5 —Labor Day holiday
 23 —Last day for fall degree candidates to submit graduation applications to their advisors for December degrees
 27 —Last day for undergraduate students to submit work for removal of incompletes from spring semester or summer session—Academic Campus

October

- 15 —Graduate Record Examination¹

¹ Test date does not apply in New York State.

- 21 —Last day to drop a course with a mark of “W”—both campuses
- 22 —Graduate Management Admissions Test
- 26-Nov. 4 —Advising and advance registration for continuing day students for spring semester
- 31-Dec. 9 —Advance mail registration-Evening studies

November

- 23 —Thanksgiving holiday begins at 5 pm
- 28 —Thanksgiving holiday ends at 8 am

December

- 9 —Last day of classes for fall semester—both campuses
- 10 —Graduate Record Examination
- 12 —Final date for oral defense of graduate theses for December completion of degrees
- 12-16 —Final examinations for fall semester—MCV Campus
- 12-17 —Final examinations for fall semester—Evening studies
- 12-20 —Final examinations for fall semester—Academic Campus
- 20 —Christmas vacation begins at 5 pm
- 26 —Official date of December diploma
- Winter intersession classes begin

1984

January

- 3-4 —Evening studies registration
- 3-5 —Orientation and advising for all day students—Academic Campus
- 5 —Registration for all day students—Academic Campus
- Orientation and registration for new students—MCV Campus
- 9 —Classes begin at 8 am
- 9-13 —Add/drop and late registration for all students
- 20 —Last day for spring degree candidates to submit graduation applications to their advisors for May degrees
- 28 —Graduate Management Admissions Test

February

- 4 —Graduate Record Examination
- 7 —Last day for undergraduate students to submit work for removal of incompletes from fall semester
- 27 —Summer advance registration begins

March

- 2 —Last day to drop a course with a mark of “W”—both campuses
- 3 —Spring vacation begins at noon—both campuses
- 12 —Spring vacation ends at 8 am—both campuses
- 15-23 —Advising and registration for continuing students for fall semester
- 17 —Graduate Management Admissions Test

April

- 24 —Last day of classes for spring semester—Academic Campus
- 25 —Study day
- 26-May 4 —Final examinations for spring semester—Academic Campus

- 27 —Last day of classes for spring semester—MCV Campus
- 28 —Graduate Record Examination¹
- 30 —Final date for oral defense of graduate theses for May graduation
- 30-May 4 —Final examinations for spring semester—MCV Campus
- 30-May 5 —Final examinations for spring semester—Evening studies

May

- 12 —Commencement Day (includes August and December graduates)
- 14 —Summer sessions begin

June

- 9 —Graduate Record Examination²
- 16 —Graduate Management Admissions Test

July

- 6 —Last day for summer degree candidates to submit graduation applications to their advisors for August degrees

August

- 10 —Summer sessions end

1984–1985 University Calendar

July

- 6 —Last day for summer degree candidates to submit graduation applications to their advisors for August degrees

August

- 6 —Final date for oral defense of graduate theses for August completion of degrees
- 10 —Summer sessions end
- 18 —Official date of August diploma
- 20-22 —MCV orientation and registration
- 20-24 —Orientation and advising for all day students—Academic Campus
- 21 —Faculty meeting at 8:30 am—Academic Campus
- Faculty meeting at 3:30 pm—MCV Campus
- 21-22 —Evening studies registration
- 22-24 —Registration for all day students—Academic Campus
- 23 —Classes begin at 8 am—MCV Campus
- 23-30 —Add/drop and late registration—MCV Campus
- 27 —Classes begin at 8 am—Academic Campus
- 27-30 —Add/drop and late registration—Academic Campus

September

- 3 —Labor Day holiday
- 21 —Last day for fall degree candidates to submit graduation applications to their advisors for December degrees
- 25 —Last day for undergraduate students to submit work for removal of incompletes from spring semester or summer sessions—Academic Campus

¹ Test date does not apply in New York State.

² General Aptitude Section of the GRE only

October

- 19 —Last day to drop a course with a mark of "W"—both campuses
- 24-Nov. 2 —Advising and advance registration for continuing day students for spring semester
- 29-Dec. 7 —Advance mail registration—Evening studies

November

- 21 —Thanksgiving holiday begins at 5 pm
- 26 —Thanksgiving holiday ends at 8 am

December

- 7 —Last day of classes for fall semester—both campuses
- 8-9 —Study days
- 10 —Final date for oral defense of graduate theses for December completion of degrees
- 10-14 —Final examinations for fall semester—MCV Campus
- 10-15 —Final examinations for fall semester—Evening studies
- 10-18 —Final examinations for fall semester—Academic Campus
- 18 —Christmas vacation begins at 5 pm
- 26 —Official date of December diploma
- Winter intersession classes begin

1985**January**

- 8-9 —Evening studies registration
- 8-10 —Orientation and advising for all day students—Academic Campus
- 10 —Registration for all day students—Academic Campus
- Orientation and registration for new students—MCV Campus
- 14 —Classes begin at 8 am—both campuses
- 14-17 —Add/drop and late registration for all students
- 25 —Last day for spring degree candidates to submit graduation applications to their advisors for May degrees

February

- 12 —Last day for undergraduate students to submit work for removal of incompletes from fall semester—Academic Campus

March

- 4 —Summer advance registration begins
- 8 —Last day to drop a course with a mark of "W"—both campuses
- 9 —Spring vacation begins at noon—both campuses
- 18 —Spring vacation ends at 8 am—both campuses
- 21-29 —Advising and registration for continuing students for fall semester

April

- 30 —Last day of classes for spring semester—Academic Campus
- Final date for oral defense of graduate theses for May graduation

May

- 1 —Study day
- 2-10 —Final examinations for spring semester—Academic Campus
- 3 —Last day of classes for spring semester—MCV Campus
- 6-10 —Final examinations for spring semester—MCV Campus

- 6-11 —Final examinations for spring semester—Evening studies
 18 —Commencement Day (includes August and December graduates)
 20 —Summer sessions begin

July

- 12 —Last day for summer degree candidates to submit graduation applications to their advisors for August degrees

August

- 16 —Summer sessions end

1983

JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S
1 2	1 2 3 4 5 6	1 2 3	1	1 2 3 4 5	1 2 3
3 4 5 6 7 8 9	7 8 9 10 11 12 13	4 5 6 7 8 9 10	2 3 4 5 6 7 8	6 7 8 9 10 11 12	4 5 6 7 8 9 10
10 11 12 13 14 15 16	14 15 16 17 18 19 20	11 12 13 14 15 16 17	9 10 11 12 13 14 15	13 14 15 16 17 18 19	11 12 13 14 15 16 17
17 18 19 20 21 22 23	21 22 23 24 25 26 27	18 19 20 21 22 23 24	16 17 18 19 20 21 22	20 21 22 23 24 25 26	18 19 20 21 22 23 24
24 25 26 27 28 29 30 31	28 29 30 31	25 26 27 28 29 30	23 24 25 26 27 28 29 30 31	27 28 29 30	25 26 27 28 29 30 31

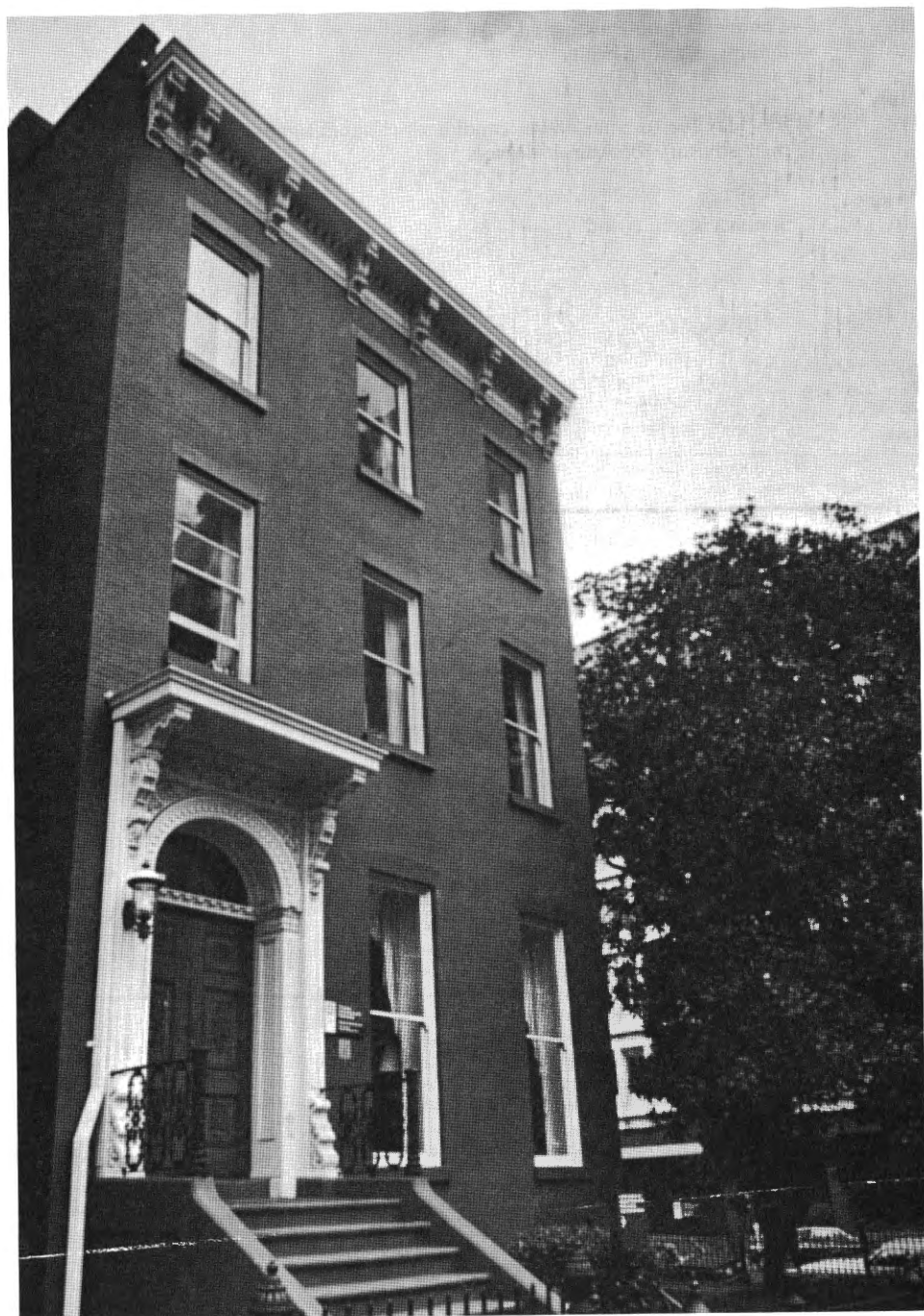
1984

JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S
1 2 3 4 5 6 7	1 2 3 4	1 2 3	1 2 3 4 5 6 7	1 2 3 4 5	1 2
8 9 10 11 12 13 14	5 6 7 8 9 10 11	4 5 6 7 8 9 10	8 9 10 11 12 13 14	6 7 8 9 10 11 12	3 4 5 6 7 8 9
15 16 17 18 19 20 21	12 13 14 15 16 17 18	11 12 13 14 15 16 17	15 16 17 18 19 20 21	13 14 15 16 17 18 19	10 11 12 13 14 15 16
22 23 24 25 26 27 28 29 30 31	19 20 21 22 23 24 25 26 27 28 29	18 19 20 21 22 23 24 25 26 27 28 29 30 31	22 23 24 25 26 27 28 29 30	20 21 22 23 24 25 26 27 28 29 30 31	17 18 19 20 21 22 23 24 25 26 27 28 29 30

JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S
1 2 3 4 5 6 7	1 2 3 4	1	1 2 3 4 5 6	1 2 3	1
8 9 10 11 12 13 14	5 6 7 8 9 10 11	2 3 4 5 6 7 8	7 8 9 10 11 12 13	4 5 6 7 8 9 10	2 3 4 5 6 7 8
15 16 17 18 19 20 21	12 13 14 15 16 17 18	9 10 11 12 13 14 15	14 15 16 17 18 19 20	11 12 13 14 15 16 17	9 10 11 12 13 14 15
22 23 24 25 26 27 28 29 30 31	19 20 21 22 23 24 25 26 27 28 29 30 31	16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	21 22 23 24 25 26 27 28 29 30 31	18 19 20 21 22 23 24 25 26 27 28 29 30	16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

1985

JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S
1 2 3 4 5	1 2	1 2	1 2 3 4 5 6	1 2 3 4	1
6 7 8 9 10 11 12	3 4 5 6 7 8 9	3 4 5 6 7 8 9	7 8 9 10 11 12 13	5 6 7 8 9 10 11	2 3 4 5 6 7 8
13 14 15 16 17 18 19	10 11 12 13 14 15 16	10 11 12 13 14 15 16	14 15 16 17 18 19 20	12 13 14 15 16 17 18	9 10 11 12 13 14 15
20 21 22 23 24 25 26 27 28 29 30 31	17 18 19 20 21 22 23 24 25 26 27 28	17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	21 22 23 24 25 26 27 28 29 30	19 20 21 22 23 24 25 26 27 28 29 30 31	16 17 18 19 20 21 22 23 24 25 26 27 28 29 30



PART I—Virginia Commonwealth University

THE UNIVERSITY

Virginia Commonwealth University is an urban institution of higher education located in the heart of Richmond, Virginia. It is comprised of two campuses: the Medical College of Virginia Campus is located east of the financial, governmental, and shopping area of downtown Richmond; the Academic Campus is two miles west in a residential area that dates from the nineteenth century. This area is called the Fan District, so named because the streets separate from each other as they move westward. The Fan is bounded on the east by the Academic Campus and on the west by the Boulevard, on which is located, among other things, the Virginia Museum of Fine Arts and the Virginia Historical Society.

Virginia Commonwealth University was created in 1968 by a merger of the Medical College of Virginia and Richmond Professional Institute. VCU traces its founding date to 1838, the year in which the older of the two institutions, the Medical College of Virginia, was created as the medical department of Hampden-Sydney College. This department became an independent institution in 1854. The Academic Campus was the former Richmond Professional Institute (RPI) which began in September, 1917, as the Richmond School of Social Work and Public Health.

Today the total university enrollment is

more than 20,000. The university has four teaching hospitals, a School of Graduate Studies, and 12 academic schools (Allied Health Professions, Arts, Basic Sciences, Business, Community and Public Affairs, Dentistry, Education, Humanities and Sciences, Medicine, Nursing, Pharmacy, and Social Work) which offer 60 undergraduate programs, 57 master's degree programs, and 18 doctoral degrees. The university has a diverse student body. Persons of all ages pursue their education at VCU and come from every segment of society. Forty-four states and 27 foreign countries are represented in the university's student body.

The university is a member of the American Council on Education, the American Association of State Colleges and Universities, the Council of Graduate Schools in the United States, the Association of Urban Universities, Oak Ridge Associated Universities, the Association of University Evening Colleges, the National Association of College and University Summer Sessions, and the Association of Virginia Colleges. The university is also a member of the National Association of State Universities and Land Grant Colleges, a body consisting of 139 institutions whose memberships are based on being major graduate and research institutions. VCU is fully accredited by the Southern Association of Colleges and Schools, the regional accrediting agency for

institutions of higher education in the Southern area of the United States.

THE MISSION OF VIRGINIA COMMONWEALTH UNIVERSITY¹

Virginia Commonwealth University is a comprehensive, urban, public university whose mission is to provide a fertile and stimulating environment for teaching, learning, research, and service; to promote the pursuit of knowledge; and to disseminate professional skills. Characteristic of comprehensive universities, its thrust is toward the education of citizens who need the solid values and proven strengths of the past as well as knowledge of future alternatives in dealing with society's increasingly urban-influenced problems, wherever these problems may exist. The university's mission includes the following provisions:

A scholarly climate which will inspire in the student a lifelong commitment to learning and service which will develop in the student competence and motivation to work toward the realization of individual and community potential, and which will set for the student an example of excellence.

An environment of educational excellence which values diversity and enables faculty to pursue their work in accordance with the highest standards and to serve as exemplary role models.

Educational services for the adjacent urban community through flexible scheduling and for adults and professionals in adjacent regions through continuing education programs.

Educational services away from the metropolis for selected programs so that graduates are prepared to serve the commonwealth in diverse locales.

Research and educational activities in all disciplines to develop and communicate new knowledge, to improve the quality of life, and to promote the best use and general understanding of human and environmental resources.

The recognition of the imaginative power of the arts and humanities in reflecting the problems and aspirations of society; and the providing of opportunities to emphasize the

value of the arts and humanities for oneself and for society through public exhibitions and performances.

Comprehensive health care services which meet patient and community needs and which provide an optimal environment both for education and training of health care professionals and for innovative studies on improving health care delivery.

The establishment of the university as a planning and resource center which, drawing upon the unique resources of a major urban area, is devoted to the solution of problems confronting Virginia's communities; to the identification of emerging social needs; and to the planning required for orderly future growth and development.

SCHOOL OF GRADUATE STUDIES

Administrative Officers

JOHN J. SALLEY, D.D.S., Ph.D., D.Sc.

Vice-President for Research and

Dean of Graduate Studies

JOHN H. McGRATH, B.A., M.A., Ph.D.

Associate Dean of Graduate Studies

GEORGE C. CANAVOS, B.S., M.S., Ph.D.

Assistant Dean of Graduate Studies

WILLIAM L. DEWEY, B.S., M.S., Ph.D.

Assistant Dean of Graduate Studies

WILLIAM R. STEWART, B.F.A., M.Ed., D.Ed.

Assistant Dean of Graduate Studies

Graduate programs are administered by the individual departments and schools throughout the university with assistance from the School of Graduate Studies. Major coordination of the various degree programs is performed by the University Graduate Council, comprised of two elected faculty members from each of the 12 schools as well as two representatives elected from the Academic Council. Graduate student members from each of the two campuses also have membership on the Council, which is chaired by the dean of the School of Graduate Studies. Members of the University Graduate Council for 1983-1984 are

Moustafa Abdelsamad—Business

Diane Bernard—Social Work

S. Gaylen Bradley—Basic Sciences

James Burns—Dentistry

Philip Coleman—Basic Sciences

Jack Duncan—Education

Marilyn Erickson—Humanities and Sciences

Mario Escobar—Medicine

Gilbert Fairholm—Community and Public Affairs

David Farmer—Community and Public Affairs

Curtis Hall—Business

¹ As approved by the Board of Visitors, March 17, 1977.

JoAnne Henry—Nursing
 Charles Hepler—Pharmacy
 Robert Janke—Arts
 Robert Lamb—Allied Health Professions
 Jaclyn Miller—Social Work
 Raphael Ottenbrite—Humanities and Sciences
 Kent Palcanis—Dentistry
 John Povlishock—Basic Sciences
 Daniel Reeves—Arts
 Richard Rezba—Education
 Margaret Spaulding—Nursing
 James Stubbins—Pharmacy
 Charles Watlington—Medicine
 Robley Wood—Business
 Robert Young—Allied Health Professions
 Terri Bearisto—Student Member, Basic Sciences
 Blake Brown—Student Member, Humanities
 and Sciences
 Roger Brown—Student Member, Social Work
 James Moore—Student Member, Basic Sciences

The following graduate degree programs
 are offered at the university:

Doctor of Philosophy

Anatomy
 Orthopaedic Physical Therapy
 Art History²
 Biochemistry
 Biostatistics
 Business
 Chemistry
 Health Services Organization
 and Research
 Human Genetics
 Microbiology and Immunology
 Pathology
 Pharmaceutical Chemistry
 Pharmacology and Toxicology
 Pharmacy and Pharmaceutics
 Physiology and Biophysics
 Neurophysiologic Physical Therapy
 Psychology
 Clinical
 Counseling
 General
 Social Policy and Social Work
 Urban Services

Doctorate in Public Administration

Master of Accountancy

Master of Art Education

Master of Arts

Art History
 Historical
 Museum Studies
 Economics
 English/English Education

Master of Business Administration

Master of Education

Administration and Supervision
 Library/Media
 Adult Education
 Counselor Education
 Curriculum and Instruction
 Early Childhood Handicapped
 Mathematics Education
 Occupational Education
 Reading
 Special Education
 Emotionally Disturbed
 Learning Disabilities
 Mentally Retarded

Master of Fine Arts

Crafts
 Ceramics
 Furniture Design
 Glassworking
 Jewelry or Metalworking
 Textiles
 Creative Writing¹
 Design
 Interior Environments
 Photography/Film
 Visual Communications
 Painting and Printmaking
 Sculpture
 Theatre
 Acting
 Costume Design
 Directing
 Dramaturgy
 Stage Design/Technical Theatre
 Theatre Education

Master of Health Administration

Master of Interdisciplinary Studies

Master of Music

Applied Music, including synthesizer
 Church Music
 Composition—Theory
 Conducting

¹To begin fall 1984 subject to final approval of the
 State Council of Higher Education for Virginia.

²To begin fall 1983 subject to final approval of the
 State Council of Higher Education for Virginia.

4 Virginia Commonwealth University

Education
Music History and Literature
Piano Pedagogy

Master of Music Education

Master of Public Administration

Master of Science

Administration of Justice
Anatomy
Biochemistry
Biology
Biostatistics
Business
 Business Education
 Economics
 Finance
 Information Systems
 Marketing
 Personnel and Industrial Relations
 Quantitative Methods
 Real Estate and Urban Land
 Development
 Risk Management and Insurance
Chemistry
Gerontology
Human Genetics
Mass Communications
Mathematical Sciences
 Applied Mathematics
 Computer Science
 Mathematics
 Statistics
Medical Technology
Microbiology and Immunology
Nursing
 Community Health Nursing
 Community Health Nursing—Family
 Nurse Practitioner
 Maternal and Infant Nursing—Obstetric-
 Gynecologic Nurse Practitioner
 Medical-Surgical Nursing
 Nursing of Children
 Nursing of Children—Pediatric Nurse
 Practitioner
 Nursing Services Administration
 Psychiatric-Mental Health
Occupational Therapy
Pathology
Pharmaceutical Chemistry
Pharmacology and Toxicology
Pharmacy and Pharmaceutics
Physical Education
Physical Therapy

Physiology and Biophysics

Psychology
 Clinical
 Counseling
 General

Recreation
Rehabilitation Counseling
Sociology

Master of Science in Nurse Anesthesia

Master of Science in Occupational Therapy
 Basic Professional

Master of Social Work

Master of Taxation

Master of Urban and Regional Planning

Community Services Planning
Health Planning
Land Use and Environment Planning
Urban and Regional Economic Development

OFF-CAMPUS GRADUATE INSTRUCTION

As a comprehensive educational institution, the university is dedicated to serving the needs of Virginians by providing off-campus graduate credit instruction at various locations throughout the state. Such instruction, encompassing many graduate courses, is offered in response to an expression of need from various locales. The majority of off-campus instruction, however, is offered within the region of the Capital Consortium for Continuing Higher Education, which consists of the Richmond-Petersburg area and surrounding counties.

Off-campus instruction features the same course work that is available on campus, and off-campus courses are fully degree-applicable within the normal admission standards of the various schools of the university.

For additional information on off-campus credit instruction, write or call the Coordinator for Off-Campus Credit Instruction, Division of Continuing Studies and Public Service, 901 West Franklin Street, Room 105, Richmond, VA 23284, (804) 257-6032.

ACADEMIC RESOURCES

University Library Services

University Library Services supports and

enriches the curriculum and research endeavors of Virginia Commonwealth University. ULS services include information and reference assistance; computer-assisted literature searching; interlibrary loans; class reserves; photocopying facilities; orientations, tours and bibliographic instruction; television production and distribution; audiovisual lecture support; non-print curriculum support materials; film library; and medical and biological illustration, graphic art, and photography production services.

University Library Services collections include 901,172 volumes in all formats and 8,533 periodical titles. The Tompkins-McCaw Library contains major health sciences collections of 202,851 volumes and 3,577 periodical titles, while the Cabell Library has growing reference and research collections of 699,321 volumes, 4,956 periodical titles, microform, music score and phonorecord collections and media materials. The staff of the Collections Management Division works with faculty and graduate students for journal selections and materials purchases.

In addition to their own collections, ULS interlibrary loan divisions can obtain materials readily from other colleges and universities in Virginia, from outside the state, or from the Library of Congress. The Virginia State Library and the main branch of the Richmond Public Library are both within walking distance of the university. These two institutions provide access to an additional one million volumes.

Computer-Assisted Literature Searching at University Library Services is designed to provide graduate students and faculty with computer-produced bibliographies tailored to their specific research needs. This service provides access to more than 50 data bases in the health and applied sciences, social and behavioral sciences, business, and the humanities. Search analysts work with clients to define research topics, to determine whether they fit computerized search criteria, to select appropriate data bases, and to plan search strategies.

ULS Outreach Services provide television production and distribution services, audiovisual lecture support services, an extensive film library, and five learning resource

centers which house print and non-print curriculum support materials.

Special Collections and Archives hold primary resource materials, Tompkins-McCaw Library housing a history of medicine collection, and Cabell Library maintaining materials in literary and social history. The University Archives also include other print materials, deposit copies of university theses, and non-current university records.

The James Branch Cabell Library is located at 901 Park Avenue on the Academic Campus. It is open seven days a week: Monday-Friday, 7:30 am to midnight; Saturday, 9 am to 9 pm; and Sunday, 1 pm to midnight. Additional services include group study rooms, typewriter rooms, lockers, and a specially-designed study room containing equipment to aid the visually-impaired. Cabell Library has been designated as a partial depository for United States Government documents.

The Tompkins-McCaw Library is located at 509 North 12th Street on the MCV Campus. Additional services include reserved study carrels for students writing theses or dissertations. The library is open seven days a week: Monday-Friday, 8 am to 11 pm; Saturday, 8 am to 5 pm; and Sunday, 1 pm to 11 pm. The Tompkins-McCaw Library is a designated resource library for the southeastern states in the Regional Medical Library.

The University Media Production Center is located in Sanger Hall on the MCV Campus. Hours are 8 am to 4:45 pm. UMPC offers graphic art, medical and biological illustration, and photography production services to the university community. Consultation services are available for the design and presentation of lecture materials, books, and other complex projects.

Research

While Virginia Commonwealth University is one of the leaders in teaching among the institutions of higher education in the state, it is also an institution which commits a significant portion of its resources to research and scholarly activities. VCU is fully committed to the proposition that a broad-based program of research investiga-

tions enhances the teaching mission of the university while, at the same time, it improves the quality of services provided to the community. During the fiscal year ending on June 30, 1982, the university received more than \$28.7 million in sponsored program support from a variety of federal agencies, private organizations, philanthropy, and endowment income. The extensive and diverse nature of the university's research programs is directly related to the excellence of the faculty on both campuses. Prospective graduate students can anticipate working in a lively intellectual environment. Many faculty of the university who are directly involved in graduate education programs are recognized nationally and internationally in their fields of endeavor.

Computing and Information Resources

The Department of Academic Computing provides staff support and facilities for faculty, staff, and students of the university in using computers for instruction, research, and certain community service activities. Individual consultation is available, and scheduled short courses are offered each semester on both campuses. Information is provided to users by a User's Guide, Mini-guides, and a newsletter, as well as the annual Faculty's Introduction to Academic Computing and the Academic Computing Referral Guide.

Computing hardware available for Academic Computing use includes an Amdahl V-7, an IBM 370-168 CPU, an H-P 3000-III, and a Dec-Vax 11/780. In addition to the usual terminal devices, graphics output and optical scanner input are available.

Academic Computing is part of the Department of Computing and Information Resources which includes administrative data processing and the administration of the Consolidated Computer Center.

The computing resources are widely used in the academic program of the university and are accessible to students at all levels. The computers operate 24 hours a day throughout the year with access areas open for use approximately 12 hours a day during the week and on weekends.

Statistical Consultation Resources

Professional statisticians who are faculty

members in biostatistics, mathematical sciences, business, and other departments or schools, hold membership in the university's Institute of Statistics, an organization whose objectives are to coordinate statistical consultation in support of faculty research, notably in statistical design and analysis, regardless of the field of application; to serve as a professional resource for teaching programs in statistics and for those involving statistics; and to develop pure and applied research in statistical theory and methodology.

VCU's Institute of Statistics has 17 members and 12 associate members.

GRADUATE TUITION AND STUDENT FEES

Contact the Office of University Enrollment Services or the School of Graduate Studies for a copy of the 1983-84 tuition and fees schedule.

Part-Time and Overload Graduate Study Fees

Graduate students registered for nine or more semester hours will be charged full tuition and fees. The part-time tuition rate will be paid by students registered for fewer than nine semester hours. Students registering for more than the maximum 16-hour load will be required to pay per-credit-hour fees for all hours over 16.

State Residence

The law affecting residence in Virginia is as follows: "No person shall be entitled to the admission privileges, or the reduced tuition charges, or any other privileges accorded only to domiciliaries, residents or citizens of Virginia, in the state institutions of higher learning unless such person is and has been domiciled in Virginia for a period of at least one year prior to the commencement of the term, semester, or quarter for which any such privilege or reduced tuition charge is sought, provided that the governing board of such institutions may set up additional requirements for admitting students." Student applications for Virginia residency are processed through the Office of University Enrollment Services.

Refunds and Rebates

Full- or part-time students who are admitted to a graduate program and who withdraw in good standing shall be entitled to a refund of a portion of tuition, room, and board fees for the semester in which they are currently enrolled. All other fees are nonrefundable.

Request for Refund

Requests for refunds must be made in writing to the Office of Student Accounting, 327 West Main Street, Richmond, VA 23284, and will be considered on the basis of the following policy statement governing the refund of tuition, room, and board and other fees except the student activities fee.

1. Students whose registration is canceled prior to the end of the add/drop-late registration period⁴ will be entitled to a full refund of tuition and fees. Room fees, except for the \$50 deposit, will be refunded in full during this period.
2. Full-time students reducing their academic status to part-time or part-time students reducing their academic course load before the end of the add/drop-late registration period will be entitled to a full refund of tuition and applicable fees on that portion dropped.
3. Students will be entitled to a refund of 50 percent of tuition, room, and applicable fees upon withdrawal after the add/drop-late registration period and before the end of the FOURTH FRIDAY FOLLOWING THE FIRST OFFICIAL DATE OF THE SEMESTER. Full-time students reducing their academic course load to part-time or part-time students reducing their academic course load after the add/drop-late registration period will be entitled to a 50 percent refund of tuition and applicable fees on that portion dropped. NO AMOUNT WILL BE REFUNDED FOR WITHDRAWAL AFTER THE FOURTH FRIDAY FOLLOWING THE FIRST DAY OF THE SEMESTER.⁵

⁴September 2nd—end of add/drop-late registration period

⁵September 23rd—fourth Friday following the first day of the semester

4. A full refund of board plan fees will be made if withdrawal from the board plan is made prior to the first official board plan day. However, students withdrawing from the university will be granted a pro rata refund based on a weekly computation throughout the term, less a \$50 administrative charge.
5. Students will not be entitled to a refund of room fees if they voluntarily withdraw from the university residence halls but remain registered for any course(s) at the university unless clearance is granted through the Office of the Dean of Student Affairs. Students will not be granted refunds unless they have completed the withdrawal procedures.

The actual date of withdrawal will be certified by University Enrollment Services, Registration, and refund, when appropriate, will be computed based on that certified date. Nonattendance of classes without having completed the withdrawal procedure does not constitute grounds for refund. Refund processing can take from six to eight weeks. Exceptions to this refund policy are made only in rare instances. Written application for an exception must be filed in the Office of Student Accounting and will be forwarded to the Office of Academic Affairs for approval.

Delinquent Accounts

The university will not issue a degree, transcript, or grade report to any student who has not paid all charges in full. Students whose accounts are not paid in full may not be admitted to final examinations at the end of semesters.

STUDENT FINANCIAL ASSISTANCE

The university operates two financial aid offices to provide financial advising, general and specific information, and application forms. Students are required to use the appropriate campus office to resolve any financial problem: 327 West Main Street (Flowers Building), Richmond, VA 23284, (804) 786-5241, for the Academic Campus; or Box 244, MCV Station (Bear Hall), Richmond, VA 23298, (804) 786-0524, for the MCV Campus.

Application and Programs

The university requires the submission of the College Scholarship Service's national application—FINANCIAL AID FORM. This form can be acquired from any college or high school or directly from the Financial Aid Office. Additionally, the university's designed application—UNIVERSITY AID FORM—must be submitted to the Financial Aid Office. This form can be acquired directly from the Financial Aid Offices at the university.

Any financial aid received from the following programs is a result of the analysis of both forms. This includes students who apply for only a Guaranteed Student Loan. All financial assistance is expected to be severely reduced based on recent federal changes. Early application is essential for consideration and receipt of financial assistance.

Guaranteed Student Loan Program

Loans from this program are available to all students who may or may not be eligible for other forms of financial assistance. Financial need is a criteria for determining eligibility.

Graduate students may borrow up to \$5,000 per year for full-time study. Half-time students may borrow up to \$2,500 per year. These loans are available to all students who are U.S. citizens or permanent residents, are admitted or are enrolled in good academic standing, and are not in default for prior loans. Loans are interest-free while the student is enrolled at least half-time. Repayment is not required until six months after the student graduates or terminates attendance. Students may take as long as ten years to repay the principal at a nine percent annual interest rate. Students should contact their local banks for information about this loan program. For students who cannot acquire loans from their banks, the university can assist in the acquisition of loans from the Virginia Educational Loan Authority (VELA). Application forms for these loans are available in the Financial Aid Offices.

Campus-Based Aid Programs

Awards from these programs are made by

the Financial Aid Office using the Financial Aid Form completed by the student. All awards are based upon the student's financial need.

National Direct Student Loans

This joint federal and university program provides low interest loans for students. The awards range from \$200 to \$5,000 per year. The repayment period commences after graduation or withdrawal from the university. Loans may be repaid over a ten-year period at five percent interest. Students are reminded that prior to graduation, or upon withdrawal from the university, it is mandatory that they receive an "exit interview," which is conducted by the Office of Student Aid Accounting, 327 West Main Street (804) 786-2301.

College Work-Study Program

This joint federal and university program permits students to work for the university or a local non-profit agency. Students receiving this award are placed by the Financial Aid Office.

Fellowships, Assistantships, and Stipends

The university awards fellowships, assistantships, or other stipends, including a variety of special health professions and nursing awards, to qualified students. These awards may be based on financial need or other selection criteria. For more information, inquiries should be made directly to the school or department in which the student intends to enroll.

Resident Assistants

Part-time employment as part of the University Residence Education Program is available to graduate students admitted for full-time study. In general, 20 hours of service per week is required, and enrollment in the course "Methods for Resident Hall Assistants" is expected. Compensation for employment is room and board and reimbursement for limited telephone service. Interested persons should contact the Residence Education Office directly. A personal interview will be required. Selection is usually completed by mid-March.

VETERAN EDUCATIONAL BENEFITS

For information on eligibility to receive Veteran Educational Assistance, please contact the Office of Veteran Services in the Flowers Building, 327 West Main Street, Richmond, VA 23284, (804) 786-2371.

To receive educational benefits, the veteran student must comply with the following procedures:

1. Veteran students must request certification each semester and each summer session from the Office of Veteran Services located at 327 West Main Street, room 102.
2. Veteran students withdrawing from VCU or dropping a course must notify University Enrollment Services and the Office of Veteran Services.
3. Benefits will not be awarded for courses taken on an audit basis. Also, if the veteran student is repeating a course or taking a course with no credits, this must be brought to the attention of the Office of Veteran Services.
4. All courses taken must apply to a degree program. These courses may include elective courses and prerequisite courses as well as the required courses.
5. It is the veteran student's responsibility to see that the transcripts are evaluated to determine the number of transfer credits accepted by the university and to have this information submitted to the Office of Veteran Services for transmittal to the V.A. Regional Office.

ADMISSIONS

The university is fully committed to equal opportunity in its graduate education programs and thus considers all applicants without regard to race, creed, sex, or national origin. Likewise, while Virginia Commonwealth University is a state-aided institution, applications are not limited to those who are residents of Virginia; however, priority is extended to applicants in some programs who are legal residents of the state. Many graduate courses are offered during the evening and weekend in order to serve the varied needs of diverse student groups.

Admission Requirements

General admission requirements for graduate study in the university are as follows: (1) graduation from an accredited college or university or its equivalent; (2) except in very unusual cases, a minimum undergraduate GPA of 2.7 on a 4.0 scale for at least the last two years of undergraduate work; (3) satisfactory scores from a standardized test commonly used and deemed appropriate for the particular discipline; (4) three letters of recommendation; (5) applicant's written statement of intent for pursuing graduate studies in a particular discipline; and (6) such additional requirements as may be established by individual programs and schools. These may include personal interviews, auditions, submission of a portfolio, or other materials.

Types of Admissions

Students may be admitted to graduate studies under one of the following classifications:

1. Candidate or prospective candidate for degree: Students who meet all requirements for admission to a degree program, and who have been recommended by the department or school in which they propose to study, may be admitted as candidates or prospective candidates for a graduate degree.
2. Provisional status: Students who have not fully met the requirements of the program or school to which admission is sought may be granted admission with a provisional status as prospective candidates for a degree. Such students must have as an initial objective the removal of provisional conditions to achieve advancement to regular status. Provisional students who do not meet the necessary continuance standards (within a specified period of time) will be dropped from the degree program. Provisional admission is a probationary status; the requirements for advancement to regular status are specified in the provisional admission letter. Remedial courses do not count towards a graduate degree.
3. Non-degree status: Students without advanced degree objectives or students

who wish to take graduate courses without formal admission to a degree program are classified as "special students." In courses where enrollment is limited, first priority is given to students admitted to the program, followed by other graduate degree-seeking students at VCU. Special students are not exempted from any prerequisite which may be specified for a course. In addition, successful completion of courses as a special student does not necessarily guarantee admission to the program. This status serves two groups of students:

- a. Those students interested only in enrolling in graduate courses for self-improvement.
- b. Those students interested primarily in certification credit without degree objectives either preceding or following a graduate degree program.

Students applying for regular candidate admission status after taking courses as non-degree seeking (special) students will not be allowed to apply more than six credits earned as special students toward the degree if accepted to a program. Satisfactory performance as non-degree seeking (special) students does not assure admission as regular degree-seeking students. There is no limit to the number of hours non-degree seeking (special) students can take in pursuing self-improvement.

Application

Application forms and materials may be obtained from University Enrollment Services, Graduate Admissions, Virginia Commonwealth University, 821 West Franklin Street, Richmond, VA 23284. There is a \$10 non-refundable application fee which must accompany the application. This fee will not be credited toward tuition payment. Some schools require special fees, as indicated in individual sections of this bulletin.

An application cannot be given final consideration until all required credentials have been received. These include the following: (1) two official transcripts, or the equivalent, from each college or university previously attended; (2) three letters of recommendation; and (3) report of scores from or other entrance examinations required

by the particular department or school. The credentials above should be considered as minimal. Parts II-XII of this bulletin include detailed information concerning admission requirements to specific programs and schools.

Entrance Examinations

To supplement other evidence of preparation for graduate work, the Graduate Council has stated that all programs at VCU must consider in their admissions the scores from a standardized test commonly used and deemed appropriate for a given discipline. Common examinations used at VCU are the Graduate Record Examination (GRE), the Graduate Management Admissions Test (GMAT), the Law School Admissions Test (LSAT) and the Miller Analogies Test (MAT). These examinations will not replace other records of achievement as a basis for admission to the Graduate School, but they will offer additional evidence concerning the qualifications of students desiring to undertake graduate work.

Application Procedures

Completed applications should be submitted to University Enrollment Services, Graduate Admissions, Virginia Commonwealth University, 821 West Franklin Street, Richmond, VA 23284. Completed applications and supporting materials are reviewed by the faculty of the program and final notification of acceptance is made by the appropriate university office. Admission to a graduate program may be contingent upon the successful completion of undergraduate courses, degree, or other prerequisites that may be specified by the program or school. Remedial courses will not apply toward a graduate degree. Applications and supporting materials should be received before the deadlines specified throughout this bulletin. Late applications will be considered when possible, but may require provisional admission.

Multiple Admissions

Students may not be admitted to degree-seeking status in more than one graduate program without petitioning and receiving written permission from the graduate

committee of the school and the dean of the School of Graduate Studies.

Admissions Appeal

Applicants denied admission may petition in writing to the dean of the School of Graduate Studies for review of admissions decisions made by individual programs.

Readmission After Academic Suspension

Students suspended for academic reasons from any graduate program may not apply for readmission to any graduate program until two academic years have elapsed from the date of suspension.

UNDERGRADUATE STUDENTS

VCU undergraduates may enroll in 500-level courses with approval of their advisors and consent of the program offering the courses. Highly qualified undergraduates approaching their last semester of study may apply for admission to a graduate program. If accepted, they may enroll in two graduate courses during the last semester of undergraduate study. Their total load should not exceed 16 hours of combined credit.

INTERNATIONAL STUDENTS

The university subscribes to the intent and purpose of the Mutual Educational and Cultural Act, the regulations of which permit international students to become a part of the university community until their stated degree objectives are met.

In order for the university to qualify with the United States government as a place of training for international students, the university is obligated to determine: (1) that applicants have the necessary ability and educational backgrounds to benefit from their experiences at this institution; (2) that their proficiency in English is sufficient to carry a full program of graduate study through submission of a satisfactory score on the Test of English as a Foreign Language (TOEFL); and (3) that they have all the funds necessary for their expenses for the entire period of their stay without resorting to employment while in the United States. The university normally has no financial resources for foreign students.

Foreign students who do not hold per-

manent resident visas cannot qualify as residents of Virginia and must pay the non-resident tuition charges. It is required that all tuition and other university fees be paid prior to, but no later than, the semester registration period in which students wish to enroll.

Once foreign nationals have been admitted, they are treated as any other students except for the immigration and naturalization rules and regulations which take precedence over university rules. The university cannot register foreign nationals until the Immigration and Naturalization Service officially gives its approval.

The university has a foreign student advisor who must meet with all foreign students upon their arrival at the university to prepare the necessary forms needed by foreign nationals to maintain correct visa status with the United States government.

Foreign students residing outside the United States should allow six months between application for admission and actual matriculation at the university.

GENERAL ACADEMIC REGULATIONS

Exceptions to graduate policies must be approved by the University Graduate Council.

Advising Program

Students are responsible for the proper completion of their academic programs. They should be familiar with the university bulletin, including general academic regulations presented by individual schools and departments. The offices of the deans and department chairmen, in cooperation with the advisors and faculty, endeavor to follow each student's academic progress, and students are encouraged to seek counsel whenever there is a need. If advisors are unable to resolve problems satisfactorily, they will refer students for further advice as is deemed appropriate and necessary. In order to aid advising, students have the responsibility to keep a current mailing address on file with University Enrollment Services, as well as the school and department in which they are enrolled.

Appeals for exceptions to graduate school policies are to be made in writing by students to their graduate chairmen. Chairmen will

forward their recommendations along with copies of the appeals to the dean of the School of Graduate Studies who represents the University Graduate Council.

Student Load

Student load is the total number of credits for which students are enrolled in any semester. Students are classified as "full-time" during any semester in which they are enrolled for nine or more credits. Students are classified as "part-time" during any semester in which they are enrolled for eight credits or less.

Degree-seeking students may be either a "full-time" or "part-time."

The maximum number of credits for which students may enroll in any semester without special permission is 16. More than 16 credits is an overload. Permission to enroll for more than 16 credits will be granted upon the written recommendation of the department chairman for degree-seeking students and the written permission of the dean of the School of Graduate Studies.

Attendance and Continuance Policies

Any person involved in any form of study at the university which involves use of university facilities, laboratories/studios, libraries, or who is supervised by or consults regularly with a faculty member concerning graduate work on a project, work of art, thesis or dissertation, must formally register for a course while engaged in these activities. A graduate student who has completed course requirements for a degree must register for a minimum of one semester hour each semester until the degree is awarded. An individual school may require more than one hour as part of its continuous registration policy.

Once admitted to a degree program, a graduate student is expected to enroll each semester. A student admitted to a program or track not requiring a project, work of art, thesis, or dissertation, must register for at least three semester hours each calendar year.

Instructors are responsible for clearly informing the student in writing of the attendance requirement for each course and the consequences of poor attendance. A

student must abide by the requirements as announced in each separate class even though the requirements may vary widely among courses.

Cancellation of Registration

A cancellation of registration must be made prior to the first day of classes by notifying, in writing, University Enrollment Services, Registration. Refunds will be issued in accordance with procedures set forth under Refunds in the Expenses and Financial Aid section of this bulletin.

Withdrawal Policies

1. Leave of Absence

Students may request a leave of absence from a program through written appeal to advisors. The advisor will forward the request with recommendation attached to the graduate dean who will respond for the university. Students who do not register for courses for more than one calendar year and who have not been granted a leave of absence, must reapply for admission to the university and to the graduate degree program.

2. Withdrawal from the University

To officially withdraw from the university, a student must submit a complete Official Withdrawal Form to University Enrollment Services before the end of the eighth week of classes. The Official Withdrawal Form is obtained from University Enrollment Services, Registration, 901 West Franklin Street. Failure to complete this form may result in the assignment of failing grades in all or some of the courses.

The student's permanent academic record will indicate a grade of "Withdrawn" (W) for all courses in which the student was enrolled.

3. Health-Related Withdrawals

While graduate students are expected to work toward completion of their degrees without interruption, health-related problems may necessitate withdrawal from the university.

- a. Health-related withdrawals must be approved in writing by the dean of the School of Graduate Studies upon

- recommendation of the student's department chairman.
- b. The student must furnish the department chairman a written request for permission to withdraw for health reasons together with a statement from a physician indicating the nature and severity of the condition, when the student should stop attending classes, and the estimated date of return to school.
 - c. In the event that the student's health problem poses a danger to the student, to patients, or to others with whom the student may come in contact and the student is unable or refuses to initiate steps to withdraw as stated in Item 2 above, administrative withdrawal of the student may be made by the dean of the School of Graduate Studies upon consultation with the appropriate faculty and a qualified physician.
 - d. If it is the decision of the dean to grant the withdrawal, the student will receive written notice stipulating conditions and time limits.
 - e. All tuition refunds or adjustments will be made in accordance with university policy as stated in the *VCU Graduate Bulletin*.
 - f. Because curricular and course content changes may occur and a student's progress toward a degree may be adversely affected due to an extended absence, specific time periods may be imposed by individual schools with respect to the length of time allowed for absence from school. If there is a delay in return beyond the allotted time period without written consent of the dean of graduate studies, the student may petition for return with advanced standing. The petition will be processed according to regularly established procedures of the school.
 - g. Prior to return to school, the student must submit to the dean of the School of Graduate Studies a statement from a physician. This statement should document that the condition which necessitated the withdrawal has been corrected to a point where the student can successfully complete all curriculum requirements with reasonable

accommodation, including classroom, laboratory, clinical, and field work experiences.

- h. After the decision to readmit the student is made, the dean of graduate studies will inform the student in writing when class attendance may be resumed. The student will be required to meet curricular requirements as specified by the dean.

Change of Discipline

Students wishing to change to a graduate discipline outside their present school should obtain appropriate new application forms from University Enrollment Services. Generally they will have to submit new applications to the new program with all material required of new applicants. The dean of graduate studies will work with the administrators of the two disciplines to facilitate the admission process for students who are eligible.

Transfer Credit

Generally, a maximum of one third of the hours required for a master's degree may be transferred from another VCU program or outside institution and applied toward that degree. A maximum of 25 percent of course work other than research applied toward all doctoral programs at VCU may be transferred from another VCU program or outside institution if not previously applied toward another degree. Acceptance of transfer credit is made at the school level. (Various schools may have more stringent requirements.)

All transfer work must be at the "A" or "B" grade level from an accredited institution or university. "Credit" or "pass" grades can be accepted only if approved by petitioning the School Graduate Advisory Committee or equivalent. Students must be in good standing both at Virginia Commonwealth University and at the institution from which the credits were earned. Some programs will not accept for transfer credits earned as a non-admitted special graduate student. The university will not accept for transfer course credit which does not apply to a graduate degree at the offering institution.

Change In Registration

Once students have registered for classes, changes in that registration may be made only during the following periods:

1. During Add/Drop Period

During the first week of classes students may either add or drop courses from their class schedules with approval of their advisors. Changes in registration will be allowed during the first week of classes according to the following procedure:

- a. Complete the Add/Drop Form at the designated area and obtain a copy of the form for record purposes. Courses dropped during the add/drop period do not become part of the permanent academic record.
- b. A change from "Audit" to "Credit" or "Credit" to "Audit" may be affected only during the add/drop period.

2. After Add/Drop Period

After a course has met for the first week, that course may not be added by students. Courses may not be dropped after the eighth week of classes. See the calendar in this bulletin for exact dates. Courses may be dropped only in accordance with the following procedures:

- a. After the first week of classes and until the end of the eighth week of classes, drop forms may be obtained only in the Office of University Enrollment Services, Registration, and must be filed with that office before the drop is official. Students should retain a copy of the drop form for record purposes.
- b. Courses dropped after the first week of classes and before the end of the eighth week of classes will become part of the permanent academic record and will indicate a mark of "withdrawal" (W).
- c. Students who do not complete drop forms when ceasing to attend a class will be assigned failing grades.

Residence

For all Ph.D. programs, a period of residence of at least two consecutive semesters is required. Residency is defined as at least nine credits per semester. The specific

requirements for residency will be detailed by the individual programs.

DEGREE REQUIREMENTS

The minimum course requirements, rules of admission to degree candidacy, language requirements, theses or dissertation requirements, comprehensive examinations, transfer of credits, and the like, are spelled out for each program in Parts II-XII of this bulletin. Many schools, programs, and departments print special brochures, student manuals, and program guides which may be requested from the appropriate dean or program director.

Thesis/Dissertation Examinations

General regulations applying to thesis/dissertation committees and competency examinations are as follows:

A graduate advisory committee shall be appointed for each candidate for a master's degree from whom there is a requirement to produce a thesis or its equivalent in the form of a research project, performance, exhibit, or other production. The committee will coordinate and supervise the preparation of the thesis or its equivalent. The committee shall have a minimum of three faculty, one of whom should be from a department, program, or area of specialization other than that in which the candidate is enrolled. The chairman of the committee will be designated as the candidate's faculty advisor. Master's candidates for whom a thesis or its equivalent is not required will have an advisor, but not necessarily a committee, appointed by mechanisms determined by the department.

A graduate dissertation committee shall be appointed for each doctoral candidate. The committee will have a minimum of five faculty members, including a chairman, who will serve as the candidate's faculty advisor, and at least one but preferably two members from other than the discipline of the candidate.

Upon satisfactory completion of all program requirements for admission to candidacy, the doctoral matriculant will take written and/or oral preliminary candidacy examinations administered by the student's major department or school. Successful

completion of the examinations shall entitle the student to advance to doctoral degree candidacy status. The candidate is then allowed to proceed with the research and preparation of the dissertation and any other doctoral degree requirements designated by the granting department.

In the event of failure, the student may be permitted to retake once the preliminary candidacy examinations upon approval of the appropriate graduate program committee.

All research thesis and dissertation credits taken as part of the final project (thesis/dissertation/project) for awarding a graduate degree are to be graded each semester either "P" or "F." There is no limit to the number of these credits a student may take while pursuing completion of the degree as long as the student receives a grade of "P" for each credit. An individual department may terminate a student who does not progress satisfactorily as indicated by an "F" grade in research, thesis/dissertation course work.

Graduation Requirements

Candidates for degrees are eligible for graduation upon completion of all requirements in effect at the time of the first registration, provided the students are continuously enrolled and provided the requirements are met within the time limit specified by the school or program. Students failing to satisfy the time requirement and who are readmitted to a program shall satisfy requirements in effect at the time of reacceptance into the degree program.

All degrees are conferred by the VCU Board of Visitors upon recommendation of the graduate faculty. Degrees are granted at the close of the semester or summer session in which the students complete their work. Degrees will not be granted unless all financial obligations have been resolved with the university's accounting office. No degrees will be conferred unless students make formal application for graduation. Application forms may be obtained from University Enrollment Services, Academic Records. Some schools require additional forms which must be cleared through the dean's office of the school in question.

Graduation applications must be sub-

mitted by students to their advisors or deans no later than the dates indicated in the calendars appearing in the front of this bulletin. Students should schedule conferences with their advisors well ahead of the deadline and should note that the application requires, in addition, the approval of the department chairman, or the school director of graduate studies, and the dean. Students may not use the same credits for two master's degrees.

A minimum of one-half of the required courses in a program and submitted for graduation will be those designated as exclusively for graduate students. The grade-point average for graduation must be based on all graduate courses attempted.

In addition to the specific requirements listed by departments, the following general requirements must be met for graduation.

Degree applicants:

1. Must apply for graduation by the dates specified in the University Calendar.
2. Must have achieved an overall grade-point average of 3.0 ("B").
3. Will receive no graduate credit for courses in which a grade of less than "C" is given.
4. Must not have more than six semester hours of graduate courses with a grade of "C." Students who receive a grade of "C" or below on more than six semester hours will be reviewed for possible academic termination by their graduate program faculty.
5. Must show acceptable professional behavior to be retained in a graduate program.

The total number of semester credits required for graduation depends upon the major. Specific information may be found under the degree program descriptions.

Reapplying for Graduation

Candidates who do not graduate at the end of the semester for which they have made application must reapply.

Time Limit for Completion of Degree Requirements

The time limit for a graduate degree will not extend beyond a period of seven years, which, at the master's level includes five years with two possible one-year extensions

which may be granted, upon petition, by the dean of the School of Graduate Studies.

All work applied toward the degree, including that transferred from other institutions, shall not be older than seven years at the time the required didactic courses have been completed.

GRADING SYSTEM

Grade Reports

An official university grade report will be mailed each semester and at the end of the summer sessions to the student's mailing address as designated on the registration form. Students may change their official address by submitting a written request to University Enrollment Services, Virginia Commonwealth University, 821 West Franklin Street, Richmond, VA 23284.

Repeated Courses

Students receiving grades below "B" shall repeat a course only upon the advice of their program directors. Both the original grade and the repeat grade shall be included in the calculation of the grade-point average.

Grade Review Procedure

If a student thinks that a grade is inaccurate, the situation should be discussed with the faculty member. This will allow the faculty member to explain how the final grade was determined and, if an error is detected, to submit a change of grade.

If the student still thinks that the grade was unfairly assigned, a written appeal should be submitted to the department chairman. Upon receipt of the written appeal, the department chairman shall provide the student with a copy and explanation of the Grade Review Procedure and shall ensure that the requirements of the Grade Review Procedure have been met. In cases concerning grades awarded for the fall semester, the written appeal must be submitted to the department chairman no later than 30 calendar days after the beginning of the following spring semester. In cases concerning grades awarded for the spring semester or summer sessions, the written appeal must be submitted no later than 30 calendar days after the beginning of the following fall semester.

Grades

Work quality is measured by the four-point grade system with the following equivalents:

Grade Symbol and meaning	Grade Point Value per Semester Credit
A	4.0
B	3.0
C	2.0
D	1.0
F	0.0
I = Incomplete (temporary mark)	—
P = Pass	—
AU = Audit	—
W = Withdrawn	0.0
PR = Progress	—
CO = Continued	—
NC = Grade assigned for continuing enrollment	—
NG = Administrative grade assigned when no grade submitted by the instructor.	—
CR = Grade assigned for successful completion of credit by examination	—

The above scale is known as the four-point grading system since four is the highest grade point assigned. A grade of "C," except in designated courses, is considered to be unacceptable for graduate students.

The number of grade points earned is computed by multiplying the grade-point value for the letter grade by the number of semester credits for the course. As an example, a student receiving an "A" (i.e., 4 grade points) in a 3-credit course receives 12 grade points.

Grades noted by "—" for grade-point value are not considered in the computation of hours attempted, hours earned, grade points earned, or grade-point-average.

The grades of accepted transfer courses are not included in the computation of the VCU grade-point average. The minimum grade-point average required for graduation is listed in the individual school and program sections. Graduate students are not designated as special honors graduates on transcript or diploma upon completion of their program.

No graduate student shall be awarded degree credit for remedial work. Students advised to take any level course for remedial work shall be notified in writing that the course credit shall not apply to the degree they are pursuing. Other bodies may rule later, should the student wish to apply the credit to some other degree. Credit applied

toward one degree may not be applied toward any other degree at VCU.

Grade of Audit (AU)

Class size permitting, students may register for courses on an audit basis. Auditing a course means that students enroll in a course but do not receive academic credit. Students who register on an audit basis are subject to the attendance regulations of that class and may receive an administrative withdrawal for non-attendance. Students who register for audit may be subject to other course requirements at the discretion of the instructor. Audit students are charged the regular rate of tuition and fees.

Grade of Continued (CO)

The grade of "CO" may be assigned as an interim grade for those courses which run over several grade reporting periods. The "CO" indicates that the course is not expected to be completed in a single semester and that students must re-register for the course. Upon completion of the course a final grade will be assigned to the current semester and the previous "CO" grade(s) will remain. This grade may be assigned only in courses approved for such grading.

Grade of Incomplete (I)

If, because of circumstances beyond their control, students are unable to meet all the requirements of a course by the end of a semester, the mark of incomplete ("I") may be given. The award of a mark of "I" requires an understanding between instructor and student as to when and how the course will be completed. This understanding must be recorded on an Incomplete Grade Assignment Form which is submitted with the final course grade. The maximum time limit for submission of all course work necessary for removal of an "Incomplete" is the end of the last day of classes of the next semester following the semester (or summer session) in which the "Incomplete" was incurred. At that time an unremoved grade of "Incomplete" is automatically changed to a failing grade. An extension of the time limit is possible but must be approved, prior to the expiration date stated above, by the instructor and the dean of the school through which the course is offered. Written

approval indicating the new time limit must be filed with University Enrollment Services by the dean.

Grade of Pass (P)

This grade is awarded for certain courses to denote satisfactory completion of requirements. Courses assigned the grade of "P" will not be computed into the grade-point average.

Grade of Progress (PR)

The grade of "Progress" may be used only in courses designated by the University Graduate Council. "PR" is assigned as an interim grade for courses which are not completed at the time final grades are to be submitted. A grade of "PR" will not be included in the calculation of the grade point average (GPA). The grade of "PR" must be removed within the time limit set for the degree.

Grade of Withdrawn (W)

The grade of "W" indicates that the student has officially withdrawn from a course or has been dropped for non-attendance. No student who has officially withdrawn from a course or has been dropped for non-attendance may attend subsequent meetings of the course.

TRANSCRIPTS

Copies of the permanent academic record or student record folders will not be released from University Enrollment Services, Academic Records, except in very special instances and in conformity with legal requirements.

Official transcripts of a student's academic record will be issued only by University Enrollment Services, Academic Records, upon written request of the student.

A charge of one dollar shall be made for each transcript.

Transcripts given directly to students do not carry the university seal and are not official. The seal is attached when the transcript is mailed directly from the university to the receiving party.

STUDENT SERVICES

Graduate Student Society

With the encouragement and cooperation

of the dean of the School of Graduate Studies and the dean of student affairs, a group of concerned graduate students formed, in the fall of 1980, a university Graduate Student society. The society is committed to sensitizing the community of scholars to particular needs of graduate students such as housing, library privileges, health care, and intracampus transportation. As a service to graduate students, the society sponsors social and academic events which serve to introduce graduate students to peers in other disciplines. Each year the society sponsors an orientation program for new graduate students. Students wishing further information should contact the director of student activities.

Housing

Requests for housing information should be addressed to University Housing, Virginia Commonwealth University, 915 West Franklin Street, Richmond, VA 23284. Information about housing off campus may also be obtained through this office. In general, most graduate students live off campus because of VCU's limited amount of available student housing.

Health Services and Insurance

The Student Health Service on the MCV Campus is supported by a health service fee required of all health sciences students. A program of prepaid medical care is provided. The service is located on the first floor of South Hospital, 786-0206. The Student Health Service on the Academic Campus is supported by a health service fee required of all residence hall students. Other full-time students are invited to subscribe by paying the fee prior to the end of the first week of classes. The service is located at 711 West Main Street, Apartment 103, (804) 257-1212 or 257-1475.

The university is not responsible for accidents occurring to students in connection with class, laboratory, shop, field work, athletics, student activity, travel, or other activities. However, the university makes available to students an approved insurance program providing benefits at group rates. For a brochure, write to the Office of Student Accounting, 327 West Main Street, Richmond, VA 23284, (804) 786-2228.

Counseling

University Counseling Services (UCS) provides a wide range of services that meet the personal, social, vocational, and educational needs of students. The goal of the UCS staff is to promote positive growth and self-understanding by students as well as to assist students who are experiencing stress or crisis in their daily living. Besides individual and group counseling, the UCS staff offers a number of programs and workshops designed to meet specific needs of students. Some typical offerings include career development, test and math anxiety management, and the teaching of communication skills. Services are free except for a small fee for occasional testing. University Counseling Services is available to both day and evening students. The hours for service at the Academic Campus office are 8 am to 8 pm daily except Friday when UCS closes at 4:30 pm. The hours for service on the MCV Campus office are 8 am to 4:30 pm daily except on Tuesdays when the office is open until 8 pm. Semester break, spring break, and summer hours are 8 am to 4:30 pm Monday through Friday. All contacts and information are kept strictly confidential. Students can make an appointment on the Academic Campus by calling 257-1647 or visiting at 913 West Franklin Street. On the MCV Campus, they can call 786-3964 or visit the office at 101 Bear Hall at Tenth and Leigh Streets.

Placement Services

The primary function of the Office of Career Planning and Placement is to assist students of all disciplines and all degree and class levels to find suitable employment.

Counselors are available to alumni and regularly enrolled students for consultation about the formulation of career directions, specific career opportunities, and planning a job search. Through the On-campus Interview Program, representatives of business, industry, government, and education visit the campus each year to interview students and to discuss a diversity of employment opportunities. In addition, representatives of various universities schedule interviews with graduating students interested in pursuing advanced studies in graduate or professional disciplines. The Office of Career Planning

and Placement also receives listings of full-time career opportunities from many organizations that do not participate in the On-campus Interview Program.

The office maintains a career resource library containing career information, information about graduate study opportunities, and an employer resource library containing employer information and data. The office also provides job listings for currently enrolled students who are seeking part-time, temporary, or vacation employment.

All graduate students are urged strongly to register formally with the Office of Career Planning and Placement located at the Ginter House, 901 West Franklin Street, Richmond, VA 23284, (804) 257-1645.

Campus Gymnasiums

Academic Campus recreational facilities include two gymnasiums, swimming pool, weight room, gymnastics room, and dance room. For specific hours call 358-0259. The MCV Campus gymnasium includes a gymnasium for basketball and indoor tennis, recreational room, and weight room. Graduate students are also eligible for participation in 22 intramural sports activities on either campus. For specific information, call the directors of Intramural Sports (Academic Campus: 257-1285; MCV Campus: 786-0437).

University Mail Service

The university provides two locations for mail services—on the Academic Campus at 920 West Franklin Street (23284) and on the MCV Campus at 1000 East Marshall Street (23298). Window service is provided on the Academic campus Monday through Friday, 8 am to 4:25 pm, and on the MCV Campus Monday through Friday, 8 am to 4:45 pm.

Mail destined for the Academic Campus should be addressed to the respective department, Virginia Commonwealth University, 901 West Franklin Street, Richmond, VA 23284. Mail destined for the MCV Campus should be addressed to the respective department, Virginia Commonwealth University, P.O. Box Number, MCV Station, Richmond, VA 23298.

For additional information, contact the manager of University Mail Services at 901 West Franklin Street, Room 323, (804) 257-1578.

Organizations

More than 145 student clubs and organizations exist on campus, reflecting the social, recreational, educational, political, or religious interests of the student body. Various types of organizations include fraternities and sororities, departmental professional and interest groups, service-oriented groups, and numerous special interest organizations representing a wide variety of activities and interests.

A list of registered student organizations, policies affecting these groups, and information and materials necessary to form new organizations are available in the Office of Student Activities.

Student Identification Cards

Students should carry their graduate I.D. cards with them at all times and be ready to show them to any authorized university official who might request their identification. Students may obtain or validate their I.D. cards during registration. The cards are required for numerous university functions, including borrowing books from the library. Any student who loses an I.D. card should apply to University Enrollment Services, Registration, for a replacement. There will be a charge for replacement.

Automobiles

Limited on-campus parking is available to students at a cost of \$.75 per day on a first-come, first-served basis. Students may apply for evening parking in university lots at the parking office at 920 West Franklin Street.

VCU RULES AND PROCEDURES

Each member of the university community has certain responsibilities, rights, and privileges. These are stated in some detail in the *Virginia Commonwealth University Rules and Procedures*, and all students are responsible for being familiar with provisions of this document. The rules and procedures are printed in the campus calendar and are also available at the Office of Student Life. This document also provides for the process whereby disciplinary action, including separation from the university, may be taken against a member of the university community as a result of behavior which is

in violation of the prohibited conduct as stated in the Rules and Procedures. In addition to those standards of conduct described in the *Virginia Commonwealth University Rules and Procedures* and the Medical College of Virginia Honor Code, which applies to all students enrolled on the MCV Campus, a student enrolled at the university may be dismissed from the school in which enrolled for failure to meet prescribed academic program requirements.

COURSE LISTINGS

Identification of Symbols

I	a course given in the first semester
II	a course given in the second semester
I, II	a course given in each semester
I and II	a course continued through two semesters
S	a course given in summer sessions

Course Interpretation

A single number listing for a course, such as Business 648, indicates that it is a one-semester course and may be offered each semester or only one semester each year.

Courses listed with a double number, such as Theatre 603, 604 and designated as semester courses, consist of two one-semester courses, either semester of which may be taken without the other.

Courses listed with a double number, such as Speech 601-602, are designated as continuous courses and consist of two one-semester courses, the first of which can be taken without the second, but the second of which cannot be taken without the successful completion of the first.

The university reserves the right to withdraw any course or program.

Course Numbering

All schools and programs within this university use the following course numbering system.

1. All course numbers consist of three digits (XXX).
2. The first digit relates to the course level as follows:
 - a. OXX **Noncredit Courses.** Such courses are offered for students to make up deficiencies in previous training or to improve certain basic skills prior to full-time enrollment

in undergraduate credit courses.

- b. 1XX
2XX

Undergraduate, Lower Level.

Courses with these numbers are offered primarily for undergraduate students and may not be used for graduate credit, although graduate students may be required to register for courses at this level to gain a necessary foundation for other course work.

- c. 3XX
4XX

Undergraduate, Upper Level.

Courses offered for advanced undergraduates and usually constitute the major portion of specific program work leading to the baccalaureate degree.

A course designated with an asterisk (*4XX) in the undergraduate bulletin indicates that the course has been approved by the offering department and the School of Graduate Studies as applicable to certain graduate degrees for select graduate students. Such students must have their department and dean's approval to register for a limited number of such courses.

- d. 5XX

Introductory Graduate Courses.

Graduate students enroll for credit in these courses through the normal graduate advising system. Departments may limit the number of 500-level courses applicable to a graduate degree program. Advanced undergraduates may enroll in these courses for credit with consent of the offering department. Credit is applicable toward only one degree.

First Year, First Professional (Medicine and Dentistry).

Courses normally open to students enrolled in the M.D. and D.D.S. programs.

Certain courses of this group may be designated by the department and approved by the Graduate Council for graduate credit.

Fifth Year Professional Baccalaureate (Pharmacy).

Courses offered for pharmacy majors in the fifth year of the professional baccalaureate program. Certain courses of this group may be designated by the department and approved by the Graduate Council for graduate credit.

- e. 6XX **Graduate Courses.** Graduate students enroll for credit in these courses through the normal graduate advising system.
- 7XX
- 6XX **Second Year, First Profes-**

sional (Medicine, Dentistry and Pharmacy). Courses normally open only to students enrolled in the M.D., D.D.S., and Pharm. D. programs. Certain courses of this group may be designated by the department and approved by the Graduate Council for graduate credit.

- 7XX **Third and Fourth Year, First Professional (Medicine and Dentistry).** Courses normally open only to students enrolled in the M.D. and D.D.S. programs. Certain courses of this group may be designated by the department and approved by the Graduate Council for graduate credit.



PART II—College of Humanities and Sciences

ADMINISTRATIVE OFFICERS

ELSKE v.P. SMITH, B.S., M.S., Ph.D.
Dean

WILLIAM A. GLYNN, B.S., M.S., Ph.D.
Associate Dean

JOHN H. BORGARD, A.B., M.A., Ph.D.
Assistant Dean

DAVID W. HARTMAN, B.A., M.A., Ph.D.
Assistant Dean

School of Mass Communications

George T. Crutchfield, B.S., M.S.
Director

The College of Humanities and Sciences was organized in 1966 (then the School of Arts and Sciences) as a combination of several existing departments at Richmond Professional Institute: biology, chemistry, English, foreign languages, and history and political science. The Departments of Philosophy and Religious Studies, Mathematical Sciences, Physics, Psychology, Sociology and Anthropology, and Political Science were developed or added subsequently. Arts and Sciences began its first graduate programs in 1969 with the master's programs in psychology and sociology. Master's programs in biology and mathematical sciences and a doctoral program in clinical psychology were added in 1971. A master's program in English/English Education was begun in 1974 cooperatively between the Department of English and the Division of Teacher Education of the School of Educa-

tion. The graduate program in chemistry, a cooperative venture between the Departments of Chemistry on the Academic Campus and Pharmaceutical Chemistry on the MCV Campus, was administratively transferred to the School of Arts and Sciences in 1974. A master's degree in mass communications was begun in 1976, a doctoral program in social policy and social work was begun in 1978 cooperatively between the Department of Sociology and Anthropology and the School of Social Work, and the Master of Fine Arts in Creative Writing commenced in 1983.

In July 1981, the School of Arts and Sciences and the Department of Mass Communications were reorganized into the College of Humanities and Sciences and the School of Mass Communications.

GRADUATE PROGRAMS IN THE COLLEGE OF HUMANITIES AND SCIENCES

The College of Humanities and Sciences offers the following graduate degree programs:

- M. A. in English/English Education
(with the School of Education)
- M. F. A. in Creative Writing
- M. S. in biology
- M. S. and Ph.D. in chemistry
- M. S. in mass communications
(through the School of Mass Communications)

M. S. in mathematical sciences
 applied mathematics
 computer science
 mathematics
 statistics
 applied mathematics computer
 science mathematics statistics
 M. S. and Ph.D. in psychology
 M. S. in sociology

In addition to these degree programs the College of Humanities and Sciences offers selected graduate courses in the Departments of Foreign Languages, History and Geography, Philosophy and Religious Studies, Physics, and Political Science, but does not offer graduate degree programs in these departments.

REQUIREMENTS FOR ADMISSION

In addition to the general requirements for admission to graduate studies as stated in Part I of this bulletin, persons seeking admission to any of the graduate programs in Humanities and Sciences (1) should have a bachelor's degree in the discipline in which application for graduate study is made or, in some programs as noted, a bachelor's degree in some other appropriate area; (2) should submit Graduate Record Examination scores (some departments require the scores on the advanced GRE within the discipline); and (3) should have submitted letters of recommendation which comment on the applicant's ability to undertake graduate study in the specified area.

All applications will be considered in terms of the specific requirements for admission noted in the description of the individual programs and of the applicants' ability to perform satisfactorily in the program for which they have applied. The judgment of that ability will be based on the supporting material submitted with the application. Some graduate programs must limit enrollment to a fixed number of the best-qualified applicants. Final action on admission is taken by the dean of the School of Graduate Studies in consultation with the College of Humanities and Sciences and the department concerned.

Applicants whose applications reach the university after July 1 for the fall semester and after November 15 for the spring semester may not have their applications

processed in time for registration. The applicant whose application arrives late may be considered for admission as a special student, but there is no guarantee that the special student will be accepted later into a degree program. For special psychology deadlines see the Department of Psychology section of this bulletin.

REGISTRATION

Although most students register for the first semester, which begins in August, they may arrange to begin graduate work during the spring semester except for the programs in clinical and counseling psychology.

SCHOLARSHIPS, ASSISTANTSHIPS, AND FELLOWSHIPS

See departmental listings.

THE STUDENT ADVISOR AND THE GRADUATE COMMITTEE

All departments offering graduate degrees in the College of Humanities and Sciences provide graduate students with advising either through a single advisor, the student's graduate committee, or a departmental graduate committee. For details students should consult the departmental director of graduate studies or the departmental chairman.

REQUIREMENTS FOR GRADUATE DEGREES

1. Full-time graduate status shall consist of a minimum of nine and a maximum of 16 credits per semester. No more than 12 semester credits may be earned in a summer semester.
2. Graduate students are required to maintain an overall grade point average of 3.0 ("B"). (See item 4 below.) Students who do not maintain a "B" average during the course of their program may be dropped from the program at any time on recommendation of the appropriate department committee to the dean. If students earn less than a "B" on 20 percent or more of all attempted credits, their graduate status must be reviewed for continuation by the appropriate department committee.
3. At least half of the credits required in

the students' program must be those designated as exclusively for graduate students; that is, those at the 600 level or above.

4. Graduate students must have earned an overall grade point average of 3.0 ("B") in order to receive a degree.

In addition to these requirements and those set forth in Part I of this bulletin, students must meet the requirements for specific degrees set forth in the departmental listings. Students should also consult the **Continuous Enrollment Policy** stated in Part I of this bulletin.

Students are required to submit in advance of the date when they expect to receive a degree a Graduation Application Form and a Degree Completion Form (Form 3.1) to the dean of the College of Humanities and Sciences. Deadlines for the submission of the Graduation Application Form are listed in the calendar at the front of this bulletin; deadlines for submission of the Degree Completion Form will be posted in the departments; for departmental deadlines the student should consult the departmental advisor. Individual departments may require additional forms.

School of Mass Communications

FACULTY

Crutchfield, George T. *Professor and Director M.S.*, Florida State University; communications theory.

Deppa, Joan *Assistant Professor Ph.D.*, Michigan State University; economics of the media.

Fair, Charles A. *Associate Professor Ph.D.*, Ohio University; writing and reporting.

Kennamer, J. David. *Assistant Professor Ph.D.*, University of Wisconsin; research methodology.

Turpin, William H. *Professor Ph.D.*, University of North Carolina; media management.

The School of Mass Communications offers a program leading to a Master of Science degree in mass communications. The program offers candidates three tracks through which individualized programs may be developed appropriate to these professional goals:

Track One: preparation for a career as a middle- or upper-level executive of one of the mass media.

Track Two: advanced preparation, or up-

dating of proficiency, as a professional journalist in reporting and writing of urban affairs.

Track Three: preparation for teachers of scholastic journalism or for those who act as scholastic advisers and sponsors.

The program, with the cooperation of appropriate departments and schools within the university, includes interdisciplinary study in business management, the social sciences, and education. Students are encouraged to take course work in other appropriate areas that relate specifically to their interests and to the university's concern for social problems.

ADMISSION REQUIREMENTS

The program is open to graduates of colleges and universities accredited by the appropriate regional accrediting agency. Although the type of undergraduate degree is not critical to selection, each of the three tracks has requirements that must be satisfied through approved undergraduate curricula or the equivalent.

In addition to the general requirements for admission to graduate programs in the School of Graduate Studies and the College of Humanities and Sciences (Part I of this bulletin), the following requirements represent the minimum acceptable standards for admission:

1. A baccalaureate degree in an area appropriate to the mass communications degree program, with a grade point average that indicates the applicant's ability to pursue graduate work successfully.
2. Acceptable scores on the Graduate Record Examination.
3. Three recommendations from persons who are qualified to give information concerning the applicant's probable success in graduate school.
4. In the media management and the professional journalist tracks, at least one course in basic statistics. Applicants who do not meet this requirement may enroll in an undergraduate statistics course at VCU during the first semester.
5. In the media management and the professional journalist tracks, one year of economics is required. Applicants who

do not meet this requirement may enroll in ECO 201-202 or 600.

6. At least three acceptable journalistic writing courses or MAC 501 and MAC 502 for admission to the professional track; one course in journalistic writing or MAC 501 for admission to the media management track. Evidence of professional competence may be substituted for these requirements.
7. An acceptable course in communications law is required for the media management and the professional journalist tracks, and a course in some aspect of media management is required for the management track. The law requirement may be fulfilled by enrollment in MAC 408 as an approved elective. Communications law will be included in several of the journalism education track courses. A candidate in the management track may fulfill the management requirement by enrollment in one of the school's management courses as an approved elective.
8. A letter detailing career goals and how the M.S. degree program in mass communications applies to those goals should accompany the application for admission.

In addition to these minimum acceptable standards for admission, other prerequisites may be required, depending on the background and goals of the individual candidate. Holders of non-journalism/mass communications baccalaureate degrees who are considering the program should contact the school's coordinator of graduate studies for additional information.

Provisional admission may be granted where deficiencies exist, in these areas:

1. Where an applicant does not have acceptable prerequisites. These should be completed early in the program, ideally before a candidate starts taking 600 level program courses. Except in rare cases, the prerequisites *must* be completed by the time the student has completed nine hours of graduate credit.
2. Where an applicant has marginal GRE scores. Provisional, admission status will be reviewed by the Admissions

Committee after the student has completed nine hours of graduate work.

After 12 hours of graduate work, the school Graduate Program Committee will consider admitting the student to candidacy, based on his/her performance. If a student is not approved for candidacy, the student may (1) appeal to the Graduate Program Committee; (2) be advised of what further requirements could lead to acceptance; or (3) be dropped from the program. The school will request the dean to approve admission to candidacy or to support dropping the student.

DEGREE REQUIREMENTS

The master's program requires a minimum of 33 to 35 hours beyond the baccalaureate degree. A minimum of 12 credits submitted for the graduate program must be in an area or areas other than mass communications. Two courses (6-8 credits) at the 400 level may be used as approved electives in a candidate's program. A maximum of six semester hours of graduate course work may be transferred, upon recommendation of the graduate committee.

The journalism education track is non-thesis. Candidates for this track are required to complete a minimum of 20 credit hours in mass communications and 15 hours in education. This ratio is altered for candidates who have an undergraduate degree or professional experience in journalism-mass communications.

Completion of a formal thesis is an option in the media management and professional journalist tracks. Students in these tracks are required to take 27 hours of course work in either option, including a minimum of 15 in mass communications and 12 in approved electives. The remaining six hours are taken under this arrangement:

1. In the thesis option, a three-hour approved graduate elective course is required, plus a three-hour thesis course. Candidates in this option are tested covering course work and thesis defense.

2. In the non-thesis option, two additional three-hour approved graduate elective courses are required, followed by comprehensive written and oral examinations. Electives in any of the three tracks can be

approved in the interest of the candidates' individual needs.

For all candidates, a three-member examination/thesis committee will be formed, usually in the first full-time semester or equivalent, with a chairman and one member from the School of Mass Communications and a third member from another appropriate department or school within the university. The committee chairman, in collaboration with the other members, is responsible for advising students and arranges for the written and oral examinations.

Candidates are expected to indicate, at the beginning of their first semester either full-time or part-time, the track they intend to pursue.

Candidates in either the media management or professional journalist track must take the three program core requirements, usually in this order:

MAC 611 Research Methods

MAC 612 Mass Communications Theory

MAC 613 Mass Media and Society

For the media management track, the candidate must also take:

MAC 617 Media Analysis

MAC 618 Economics of the Media

BUS 607 Financial Accounting

BUS 620 Financial Concepts of

Management

BUS 633 Issues in Labor Relations

BUS 640 Management Theory and Practice

For the professional journalist track, the candidate must take, in addition to the three core courses, these mass communications courses:

MAC 614 Media-Governmental Relations

MAC 615 Urban Affairs Reporting

Candidates in the journalism education track must take these mass communications courses, unless some courses have been waived because of undergraduate degree or professional experience:

MAC 501 Journalistic Writing

MAC 502 Editing the News

MAC 519 Journalism in the Schools

MAC 603 High School Yearbooks

MAC 612 Mass Communications Theory

MAC 613 Mass Media and Society

MAC 604 Broadcasting in High Schools, may be taken as an elective.

Prospective high school teachers would have to take School of Education foundation courses, to be determined. Experienced teachers would take education courses from the following list:

EDU 534 Photography in Instruction

EDU 615 Curriculum Development

ENG/ENE 636 Teaching Composition

ENG/ENE 643 Teaching Basic Writing Skills

EDU 660 Research Methods in Education

EDU 681 Investigations and Trends in Teaching

EDU 700 Externship

A joint curriculum Advisory Committee established by the School of Mass Communications and the Division of Teacher Education of the School of Education maintains continuous communication between the two units on advising matters.

GRADUATE COURSES IN MASS COMMUNICATIONS (MAC)

501 Journalistic Writing. Semester course; 2 lecture and 4 laboratory hours. 4 credits. Prerequisite: school permission. A concentrated course in journalistic writing, including news, features, sports, columns, and editorials. Typing skill required. See School of Mass Communications for details.

502 Editing the News. Semester course; 2 lecture and 4 laboratory hours. 4 credits. Prerequisite: school permission. A concentrated course in editing for journalistic publications. Course will include copy editing, headline writing, publications page makeup and design, and editorial decision-making.

519 Journalism in the Schools. Semester course; 3 lecture hours. 3 credits. Study of school newspapers, magazines, and yearbooks; problems relating to staff selection, content of publications, copy layout, advertising, and business phases.

523 Advanced Public Relations. Semester course; 3 lecture hours. 3 credits. Prerequisites: MAC 323 or permission of instructor. Application of public relations theory and methods to case studies; specialized writing for the various media. Case analyses will include budgeting, researching issues and audiences, measuring survey results, and conducting campaigns and special events.

603 Scholastic Yearbooks. Semester course; 3 lecture hours. 3 credits. Prerequisite: school permission. The organization, staffing, content, illustration use, production techniques, typography, style, theme, advertising and business functions of a scholastic yearbook. The role of the yearbook adviser will be emphasized.

604 Broadcasting in High Schools. Semester course; 3 lecture hours. 3 credits. Prerequisite: school permission. An examination of radio and television as student media

in high schools. Broadcasting principles, directing and producing high school broadcast programs, using basic broadcast equipment. Emphasis is upon the role of the adviser-teacher.

611 Research Methods in Mass Communications. Semester course; 3 lecture hours. 3 credits. Fundamentals of mass communications research techniques (content analysis, survey research, experimental design, historiography), including an overview of computer applications, statistics, theory development, and trends in the published literature.

612 Mass Communications Theory. Semester course; 3 seminar hours. 3 credits. Nature, function, and application of mass communications theory; structure, content, and effects of media systems; social and technological events accounted for by a generalized theory of mass communications.

613 Mass Media and Society. Semester course; 3 seminar hours. 3 credits. A study of the mass media of the United States, with special attention to their historical development and their impact on other institutions. Consideration of ethical and legal aspects of the media, and problems such as access, control, and accountability.

614 Media-Governmental Relations. Semester course; 3 seminar hours. 3 credits. Study of the interaction between the media and the government, and the role of the press in the governmental process as a disseminator, opinion-maker, and adversary.

615 Urban Affairs Reporting. Semester course; 3 seminar hours. 3 credits. In-depth examination of current urban problems such as air pollution, transportation, inner-city redevelopment, ghetto life, ecology, and metropolitan government.

617 Media Analysis. Semester course; 3 lecture hours. 3 credits. Prerequisite: MAC 611. An examination of a mass medium through design and execution of a research project using one of the traditional research techniques of the field. Students will have major and minor projects for systematic study of a medium.

618 The Economics of the Media. Semester course; 3 seminar hours. 3 credits. Prerequisites: MAC 611 and 617. Advanced work in media research, especially from an economic viewpoint. Students working on individual basis will design and execute a major problem involving some economic aspect of a mass medium.

692 Independent Study. Semester course; 1-3 credits per semester. Prerequisite: permission of instructor and director of graduate studies. A maximum of three credits may be submitted toward the master's degree.

699 Thesis. 1-3 credits. May be repeated, but a maximum of three credits may be submitted toward the master's degree.

Department of Biology

FACULTY

Berliner, Martha D. *Professor and Chairman (Microbiology and Immunology)*¹ Ph.D., Columbia

University; cell biology and development of fungi, algae, and protozoa.

Blem, Charles R. *Professor* Ph.D., University of Illinois; physiological ecology of terrestrial vertebrates, ornithology.

Brown, Russell V. *Professor* Ph.D., Iowa State University; vertebrate biochemical genetics, molecular pathology.

Chinnici, Joseph P. *Associate Professor (Human Genetics)*¹ Ph.D., University of Virginia; genetics, genetic resistance to toxins.

Conway, Carolyn M. *Assistant Professor* Ph.D., University of Miami; developmental biology, teratology.

Fine, Michael L. *Assistant Professor (Physiology and Biophysics)*¹ Ph.D., University of Rhode Island; vertebrate neuroethology, fish communication.

Fisher, Robert W. *Associate Professor (Microbiology and Immunology)*¹ Ph.D., Syracuse University; developmental biology, nitrogen fixation.

Gates, James E. *Associate Professor (Microbiology and Immunology)*¹ Ph.D., University of Missouri; microbiology.

Giebel, Peter E. *Assistant Professor (Microbiology and Immunology)*¹ Ph.D., University of North Carolina; cell physiology, medical mycology.

Jeffrey, Jackson E. *Associate Professor and Associate Chairman* Ph.D., Medical College of Virginia; protein polymorphism.

Johnson, Miles F. *Professor* Ph.D., University of Minnesota; angiosperm systematics.

Kimbrough, T. Daniel *Associate Professor (Physiology and Biophysics)*¹ Ph.D., Auburn University; animal physiology, physiology of gastrointestinal serotonin.

Llewellyn, Gerald C. *Associate Professor (Pharmacology and Toxicology)*¹ Ph.D., Purdue University; biotoxins and metals.

McCowen, Sara M. *Assistant Professor* Ph.D., Virginia Commonwealth University; microbial physiology and genetics.

Mills, Richard R. *Professor* Ph.D., Virginia Polytechnic Institute and State University; insect physiology.

Pagels, John F. *Associate Professor* Ph.D., Tulane University; mammalogy, vertebrate natural history.

Reynolds, John D. *Associate Professor* Ph.D., University of South Carolina; plant embryology.

Scanlan, Michael J. *Assistant Professor* Ph.D., University of Minnesota; plant community ecology.

Seidenberg, Arthur J. *Associate Professor* Ph.D., University of Illinois; parasitology, invertebrate ecology.

Smock, Leonard A. *Assistant Professor* Ph.D., University of North Carolina at Chapel Hill; aquatic ecology, aquatic entomology, wetlands ecology.

Stewart, Jennifer K. *Assistant Professor (Physiology and Biophysics)*¹ Ph.D., Emory University; endocrine physiology.

Webb, Stanley R. *Associate Professor (Pathology)*¹ Ph.D., Purdue University; virology.

Weinstein, Michael P. *Assistant Professor* Ph.D., Florida State University; estuarine ecology, fishes, ichthyology.

¹Department in parentheses indicates joint appointment.

The Department of Biology offers programs leading to a Master of Science degree. Areas of specialization include molecular, cellular, and environmental biology, systematics and evolution, and physiology and developmental biology.

In addition to the courses offered by the Department of Biology, graduate students may enroll with permission from the Department of Biology in graduate courses offered at the Medical College of Virginia Campus in the Departments of Anatomy, Biochemistry, Biostatistics, Human Genetics, Microbiology and Immunology, Pathology, Pharmacology and Toxicology, and Physiology and Biophysics.

ADMISSION REQUIREMENTS

In addition to the general requirements for admission to graduate programs in the School of Graduate Studies (Part I of this bulletin) and the College of Humanities and Sciences, the following requirements of the Department of Biology represent the minimum acceptable standards for admission:

1. Thirty semester credits in undergraduate biology.
2. Two years of college chemistry, including organic chemistry.
3. One year of college mathematics.
4. One year of college physics.
5. Three letters of recommendation pertaining to the student's potential ability as a graduate student in biology.
6. Graduate Record Examination scores, including those of the advanced biology examination.

Provisional admission may be granted when deficiencies exist. When scores on particular sections of the advanced Biology Graduate Record Examination are low, the admissions committee may require that the student take specific courses. These deficiencies must be removed by the end of the first year of residence, at which time the student's application will be re-examined. Courses which are remedial or designed to remove deficiencies will not be accepted for credit toward the fulfillment of the course requirements for the master's degree.

DEGREE REQUIREMENTS

Master of Science degree candidates are

required to take a minimum of 38 semester credits of which:

1. nineteen credits must be courses designated exclusively for graduate students;
2. a maximum of eight credits of 400-level courses may be taken for graduate credit (not including BIO 429, 465, 491, or 492 — See *Undergraduate Bulletin* for course offerings);
3. a minimum of two and a maximum of four credits must be BIO 690 Research Seminar;
4. a minimum of six and a maximum of 12 credits must be BIO 698 Thesis;
5. lecture courses must be taken from at least three different instructors (excluding Thesis, Research Seminar and Independent Study).

All graduate students are required to write a formal thesis outline in the form of a grant proposal which must be approved by the student's graduate committee and the chairman of the department as part of initiation of thesis research. Students must take STA 543 at the earliest possible opportunity. Students entering the program with a statistics background equivalent to STA 543 may have this requirement waived with permission of the chairman of the department.

A maximum of six semester hour credits from graduate work taken at other institutions may be transferred if they meet approval of the department.

Receipt of a grade of "C" or lower in two courses constitutes automatic dismissal from the graduate program in biology.

Each student will be required to pass a final examination which will be a defense of the thesis and may include questions on any course content.

Continuous enrollment in the graduate program is required. Interruption in continuous enrollment for any reason will require that students reapply to the Department of Biology's Graduate Admissions Committee.

GRADUATE MINOR IN BIOLOGY

A minimum of nine semester hours excluding seminar and limited to a maximum of three credits of BIO 692 Independent Study.

GRADUATE COURSES IN BIOLOGY (BIO)

504 Comparative Animal Physiology. Semester course; 3 lecture and 4 laboratory hours. 4 credits. Prerequisites: BIO 218 and CHE 301, L301, 302, and L302. Comparative physiology of animals with a molecular emphasis.

507 Aquatic Microbiology. Semester course; 2 lecture and 4 laboratory hours. 4 credits. Prerequisite: BIO 303 and BIO 307 or equivalents. This course will involve a practical approach to the methods used to culture, identify, and enumerate specific microorganisms which affect the cycling of elements in aquatic systems and those which affect or indicate water quality.

512 Radiation Biology. Semester course; 3 lecture hours. 3 credits. Prerequisite: 16 credits in science, including eight credits in biology and/or permission of instructor. Lectures and demonstrations of the fundamentals of radioactivity, including the properties of radiation and the application of radioisotopes and tracer methodology to the biological sciences and nuclear medicine. Included are the biological effects of ionizing radiation on living systems and the theoretical and practical aspects of radiation protection.

L512 Radiation Biology Laboratory. Semester course; 3 laboratory hours. 1 credit. Prerequisite or co-requisite: BIO 512. Laboratory experiences applying the practical aspects of radiometric determinations to the various areas of biology, including physiology.

514 Advanced Freshwater Ecology. Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: BIO 307 or equivalent. An advanced study of freshwater ecosystems, stressing the ecology of streams and rivers. Emphasis in the laboratory will be on the structure and functioning of aquatic communities in mountain to coastal plain streams. Several weekend field trips required.

518 Plant Ecology. Semester courses; 3 lecture and 2 laboratory hours. One three-day field trip is required. 4 credits. Prerequisite: BIO 317 or permission of instructor. A lecture, field, and laboratory course concerned with the development, succession, and dynamics of plant communities and their interrelations with climate, soil, biotic, and historic factors.

519 Marine Ecology. Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: BIO 317 or equivalent. A lecture, field, and laboratory course concerned with the organizing principles of marine ecosystems. A study of selected marine faunal and floral communities and their interactions, including trophic relationships and utilization by man.

522 Evolution and Speciation. Semester course; 3 lecture hours. 3 credits. Prerequisite: BIO 310 or equivalent. Evolutionary principles, with emphasis on genetic and environmental factors leading to changes in large and small populations of plants and animals, and the mechanisms responsible for speciation.

524 Endocrinology. Semester course; 3 lecture hours. 3 credits. Prerequisites: BIO 218 and CHE 301, L301, 302, and L302 or equivalent. Hormonal control systems at the organ, tissue, and cellular level. Although the ma-

jor emphasis will be on vertebrate endocrine systems, some discussion of invertebrate and plant control systems will be covered.

525 Advanced Functional Anatomy. Semester course; 3 lecture and 4 laboratory hours. 5 credits. Prerequisite: BIO 205 or equivalent or permission of instructor. A study of the anatomy and kinesiology of the human body using prosected specimens and the dissected cadaver. Emphasis is placed upon the study of the extremities, particularly the hand. Intended primarily for students in the Department of Occupational Therapy.

529 Advanced Functional Neuroanatomy. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: BIO 525 or permission of instructor. A study of the morphological and functional aspects of the central and peripheral nervous systems of the human body with particular emphasis on motor activity.

539 Advanced Human Physiology. Semester course; 4 lecture and 2 laboratory hours. 5 credits. Prerequisites: BIO 206 or equivalent and permission of the instructor. Intended primarily for graduate students in the School of Nursing; may be taken by others with permission. This course will present physiology from a feedback control-systems point of view as a common theme for the various organ systems; it will then examine various pathophysiological situations as logical cause-and-effect relationships resulting from perturbations in the normal physiological homeostatic mechanisms. The weekly laboratory/demonstration periods will employ both "hands on" and demonstration types of exercises in order to reiterate and to strengthen points made in the lecture portion of the course.

550 Developmental Biology. Semester course; 2 lecture, 1 recitation, and 4 laboratory hours. 4 credits. Prerequisites: BIO 302 and 321. Cellular/molecular mechanisms of differentiation during embryonic and post-embryonic development in animals and plants. Genetic control at various levels leading to cell differentiation will be investigated in a number of developing systems, animal and plant embryos, seed germination, fern gametophyte, insect and amphibian metamorphosis, and animal regeneration. Laboratory work includes observation of developmental processes and experimental work using living material.

585 Virology. Semester course; 3 lecture hours. 3 credits. Prerequisites: 16 credits in biology including BIO 218 or equivalent, and 8 credits in chemistry. A comprehensive introduction to virology encompassing viruses of vertebrates, invertebrates, plants, and bacteria. Topics include physical and chemical characterization, classification, detection, replication, genetics, diseases, immunology, epidemiology, and interactions of viruses.

591 Special Topics in Biology. Semester course; variable credit; 1-4 credits. An in-depth study of a selected topic in biology. See Schedule of Classes for specific topic(s) and prerequisites. If several topics are offered students may elect to take more than one.

626 Physiological Ecology. Semester course; 3 lecture and 4 laboratory hours. 4 credits. Prerequisite: BIO 317 or 414 or equivalent. Studies of the physiological adjustments and adaptations made by organisms in response to their environment.

675 Physiology of the Cell. Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: CHE 301, 302, L302, and at least one of the following biology courses: BIO 302, 303, 311, or equivalents. Physiological principles of cellular function in bacterial, plant, and animal cells. The lecture topics include gases, electrolytes, radiations, temperature, membrane transport, bioelectricity, and cell movements. The laboratory will stress investigative techniques.

690 Research Seminar. Semester course; 1 credit. Independent reading and study in selected areas of biology leading to an oral presentation by students. May be repeated for credit.

691 Special Topics in Biology. Semester course; variable credit; 1-4 credits. An advanced study of a selected topic in biology. See Schedule of Classes for specific topic(s) and prerequisites. If several topics are offered, students may elect to take more than one.

692 Independent Study. Semester course; credits and hours to be arranged. A course designed to provide an opportunity for independent research in any area of biology outside the graduate student thesis area. Determination of the amount of credit and permission of instructor, advisor, and department chairman must be obtained prior to registration for this course.

698 Thesis. Semester course; credits and hours to be arranged. Independent research by students in areas of systematics, environmental, developmental, behavioral, cellular, and molecular biology, and comparative physiology.

Department of Chemistry

FACULTY

Bass, Robert G. *Professor* Ph.D., University of Virginia; organic chemistry.

Hawkrige, Fred M. *Professor* Ph.D., University of Kentucky; analytical chemistry.

Kobos, Robert K. *Assistant Professor* Ph.D., State University of New York at Buffalo; analytical chemistry, bioanalytical chemistry.

Melson, Gordon A. *Professor* Ph.D., Sheffield University; inorganic chemistry.

Ottenbrite, Raphael M. *Professor* Ph.D., University of Windsor; organic chemistry, polymer chemistry.

Shillady, Donald D. *Associate Professor* Ph.D., University of Virginia; physical chemistry, quantum chemistry.

Silvers, Stuart J. *Associate Professor* Ph.D., Yale University; physical chemistry, molecular spectroscopy.

Snedden, Albert T. *Assistant Professor* Ph.D., Brandeis University; organic chemistry, natural products.

Stump, Billy L. *Professor* Ph.D., University of Tennessee; physical chemistry, polymer chemistry.

Su, Syang Y. *Assistant Professor* Ph.D., University of Florida, analytical chemistry.

Terner, James *Assistant Professor* Ph.D., University of California at Los Angeles; physical chemistry, biophysics, resonance raman spectroscopy.

Topich, Joseph A. *Assistant Professor* Ph.D., Case Western Reserve University; inorganic chemistry, molybdenum coordination complexes.

Vallarino, Lidia M. *Professor* Ph.D., University of

Milano; inorganic chemistry.

Winters, Lawrence J. *Professor and Chairman* Ph.D., Kansas University; organic chemistry.

The Department of Chemistry offers programs leading to the Master of Science and Doctor of Philosophy degrees. The programs provide opportunities for concentrated study in either analytical, inorganic, organic, or physical chemistry. A plan of study is worked out for each student to ensure a sound basis for research. In keeping with the university's commitment as an urban institution, the department also offers part-time programs leading to these degrees.

ADMISSION REQUIREMENTS

In addition to the general requirements for admission to graduate programs in the School of Graduate Studies (Part I of this bulletin) and the College of Humanities and Sciences, students are expected to have a bachelor's degree from an accredited college or university with 30 semester credits in chemistry. Admission on a special basis is possible for a student temporarily lacking this expected chemistry background. Acceptance is based upon undergraduate performance, satisfactory scores on the Graduate Record Examination and letters of recommendation.

Graduate students in the Department of Chemistry may receive financial support via teaching or research assistantships or fellowships. Admission forms for graduate study and applications for fellowships and assistantships are available on request by writing to University Enrollment Services, Graduate Admissions, Virginia Commonwealth University, 821 West Franklin Street, Richmond, VA 23284.

DEGREE REQUIREMENTS

Entering graduate students are required to take proficiency examinations in analytical, inorganic, organic, and physical chemistry. These examinations are at the level of sound undergraduate courses and are offered preceding the start of the school's fall semester and after the end of the spring semester. These are used to evaluate the student's strength and weaknesses and the student's program is planned accordingly.

M. S. Requirements

Students preparing for the M.S. degree

must demonstrate competency in analytical, inorganic, organic, and physical chemistry. New students who do well on the proficiency examinations may, by decision of the chemistry faculty, be considered to have demonstrated the necessary competency. The proficiency examinations may be repeated and must be completed by the end of the third semester of study. The M.S. student is expected to earn a minimum of 18 semester credits in graduate courses in chemistry, not including credit for seminar, and 12 semester credits in research. The credit hours must include a course selected from each of the four areas: *Analytical*: Chemistry 532 Advanced Analytical Chemistry; Chemistry 630 Electroanalytical Chemistry; *Inorganic*: Chemistry 620 Advanced Inorganic Chemistry II; *Organic*: Chemistry 504 Advanced Organic: Chemistry I, Chemistry 604 Advanced Organic Chemistry II, Chemistry 605 Physical Organic Chemistry, Chemistry 606 Methods of Structural Determination in Organic Chemistry; *Physical*: Chemistry 510 Atomic and Molecular Structure, Chemistry 610 Applied Quantum Chemistry, Chemistry 615 Chemical Thermodynamics, Chemistry 616 Chemical Kinetics.

Additional graduate courses to be taken will be determined in consultation with the faculty research advisor and the faculty of the Department of Chemistry. Graduate students may elect to take courses offered on the MCV Campus. Among the courses taught at MCV of interest to chemistry students are organic pharmaceutical chemistry, stereochemistry, heterocyclic chemistry, general biochemistry, circuit design and analysis, and X-ray crystallography. The School of Basic Sciences section of this bulletin should be consulted for other courses. Students are expected to participate in the department's seminar program each semester and to present at least two formal talks in the seminar program. An acceptable research thesis and a final oral examination on the thesis are required. Full-time students should complete these degree requirements in two years.

Ph. D. Requirements

Students seeking the Ph.D. degree must demonstrate competency in analytical, in-

organic, organic, and physical chemistry. The students who do exceptionally well in the proficiency examinations may, by decision of the chemistry faculty, be considered to have demonstrated the necessary competency. The proficiency examinations may be repeated and must be completed by the end of the second year of study.

Students preparing for the Ph.D. degree must have a minimum of 24 credits in graduate courses not including credit for seminar or research. The credits must include a course selected from each of the four areas listed above. Other graduate courses to be taken will be determined in consultation with the faculty research advisor and the faculty of the Department of Chemistry. Students are expected to participate in the department's seminar program and present at least three formal talks in the seminar program. In addition to course work and seminar, the Ph.D. requires a minimum of 30 credits in CHE 697 (directed research), and the total of all credits must be at least 60. A reading knowledge of an approved foreign language is also required.

The student is required to complete a written and oral comprehensive examination in his major field to become a Ph.D. candidate. The oral comprehensive examination includes the presentation and defense of the proposed dissertation research. The student must conduct a substantial original investigation under the supervision of his advisor and must prepare a dissertation reporting the results of the research and analyzing its significance in relation to existing scientific knowledge. An oral defense of the dissertation will be held. Full-time students should complete the degree requirements in about four years.

Additional information and a more detailed description of the graduate program may be obtained from the Department of Chemistry.

GRADUATE COURSES IN CHEMISTRY (CHE)

504 Advanced Organic Chemistry I. Semester course; 3 lecture hours. 3 credits. An integrated study of certain free radical and ionic reaction mechanisms with emphasis on electronic effects and stereochemical consequences of these reactions. Classical vs. nonclassical

carbonium ions and the Hammett equation are discussed.

510 Atomic and Molecular Structure. Semester course; 3 lecture hours. 3 credits. Prerequisites: MAT 301 and PHY 208. Survey of the pertinent aspects of quantum mechanics. Line spectra, atomic structure, and molecular bonding.

532 Advanced Analytical Chemistry. Semester course; 3 lecture hours. 3 credits. Theories and principles involved in analytical chemistry including equilibrium in aqueous and nonaqueous systems, gravimetric and volumetric techniques, electrochemistry and separation methods.

550 Introduction to Polymer Chemistry. Semester course; 3 lecture hours. 3 credits. A study of macromolecular compounds which includes classifications, methods of preparation, mechanisms, stereochemistry, and applications. Physical characterizations, such as structure and property correlations, kinetics, thermodynamics, and molecular weight determinations are emphasized.

591 Topics in Chemistry. Semester course; variable credit, 1-6 credits per semester; maximum total of nine credits for all topics courses. An in-depth study of a selected topic in chemistry. See Schedule of Classes for specific topic(s) and prerequisites.

604 Advanced Organic Chemistry II. Semester course; 3 lecture hours. 3 credits. An integrated study of the mechanism and stereochemistry of organic reactions and their application to organic synthesis. Emphasis is placed on addition and condensation reactions, carbanions, carbenes, and other reactive intermediates.

605 Physical Organic Chemistry. Semester course; 3 lecture hours. 3 credits. The theory and application of physical methods in the study of the behavior of organic compounds. Topics covered include homogeneous kinetics, equilibria, acid-base catalysis, and the quantitative correlation of structure and reactivity as they apply to the understanding of the mechanisms of organic reactions.

606 Methods of Structural Determination in Organic Chemistry. Semester course; 3 lecture hours. 3 credits. Lecture and laboratory problems illustrating the application of instrumental analytical techniques for the solving of organic structural problems.

607 Organic Synthesis of Natural Products. Semester course; 3 lecture hours. 3 credits. Prerequisite: CHE 604 or permission of instructor. A study of the criteria for, applications of reactions to, and design of, complex organic syntheses, including functional group protection and control of stereochemistry.

610 Applied Quantum Chemistry. Semester course; 3 lecture hours. 3 credits. Prerequisite: CHE 510. Quantum mechanics applied to chemical problems in UV, IR, and NMR spectroscopy and the electronic structures of atoms and molecules; development of the self-consistent field equations.

611 Molecular Spectroscopy. Semester course; 3 lecture hours. 3 credits. Prerequisite: CHE 510. This course treats the interaction of radiation and molecules; the rotation, vibration, and electronic motion of molecules;

molecular spectra and recent developments in laser spectroscopy.

615 Chemical Thermodynamics. Semester course; 3 lecture hours. 3 credits. A study of the laws of thermodynamics and their application to pure phases, solutions, and changes in state.

616 Chemical Kinetics. Semester course; 3 lecture hours. 3 credits. A study of the rates and mechanisms of chemical reactions, reaction rate theory, kinetic theory of gases, and theories of catalysis.

620 Advanced Inorganic Chemistry I. Semester course; 3 lecture hours. 3 credits. The application of modern physical techniques for the determination of the symmetry, molecular structure, bonding, and reaction mechanisms of inorganic compounds.

621 Advanced Inorganic Chemistry II. Semester course; 3 lecture hours. 3 credits. Prerequisite: CHE 620 or permission of instructor. A coordinated study of synthetic methods, stereochemistry, and reaction mechanisms, including catalysis of inorganic, organometallic, and bioinorganic compounds.

630 Electroanalytical Chemistry. Semester course; 3 lecture hours. 3 credits. Prerequisite: CHE 532 or permission of instructor. The theory, application, and instrumentation of current techniques in electroanalytical chemistry is presented.

690 Research Seminar. Semester course; 1 credit. In addition to reports that are presented by students, staff, and visiting lecturers, current problems and developments in chemistry are discussed. May be repeated for credit.

691 Topics in Chemistry. Semester course; variable credit, 1-6 credits per semester; maximum total of nine credits for all topics courses. An advanced study of selected topic(s) in chemistry. See Schedule of Classes for specific topic(s) and prerequisites.

697 Directed Research. Semester course; 1-15 credits. Research leading to the M.S. and Ph.D. degree. May be repeated for credit.

Department of English

For information on the master's program in the Department of English and the Division of Teacher Education and a listing of the graduate faculty for the Department of English, please refer to Part XII of this bulletin, Interdisciplinary and Cooperatively Offered Graduate Degrees, Department of English and the Division of Teacher Education.

MASTER OF FINE ARTS IN CREATIVE WRITING

The Master of Fine Arts in creative writing program is designed for students with diverse undergraduate backgrounds. It is a program suitable for those interested

primarily in the writing of fiction, poetry, and drama; however, some emphasis is also placed on the writing of nonfiction, radio and television scripts, and on editing.

The primary aim of the M.F.A. program is to prepare students to write publishable fiction, poetry, or drama. Because applicants must submit portfolios of their writing as part of the admission process, students who have produced no creative writing prior to their application to graduate school would not be eligible for the program. Depending on their backgrounds, however, such students might be eligible for admission into specific courses.

ADMISSION REQUIREMENTS

In addition to the general requirements for admission to graduate programs in the School of Graduate Studies (Part I of this bulletin) and the College of Humanities and Sciences, the following requirements represent the minimum acceptable standards for admission:

1. A portfolio of previously written fiction, poetry, or drama;
2. Three recommendations from persons who are qualified to give information concerning the applicant's probable success in graduate school;
3. A grade-point average that is indicative of the applicant's ability to pursue successfully a graduate degree;
4. A baccalaureate degree, or its equivalent; and
5. Completion of the Graduate Record Examination.

DEGREE REQUIREMENTS

The total number of hours required for graduation is 48, distributed as follows:

Workshop — 15 hours

ENG 666 Creative Writing: Fiction

ENG 667 Creative Writing: Poetry

ENG 668 Creative Writing: Drama

ENG 671 Film and Television Scripts

Non-Fiction and Editing — 6 hours

*ENG 600 Advanced Writing and Research Reporting

*ENG 670 Literary Editing and Publishing

*ENG 672 Writing Nonfiction

BUS 652 Advanced Business Communication

Literature — 12 hours

ENG 617 Major Literary Modes

Plus any nine hours of English or American Literature at the graduate level

Any future graduate literature courses

Teaching — 6 hours (Required only of those who plan to teach — ENG/ENE 636 must be included.)

ENG 553 Studies in Linguistics

ENG/ENE 632 Applied English

Linguistics

ENG/ENE 636 Teaching Composition

ENG/ENE 637 Mass Media and the Teaching of English

ENG/ENE 643 Teaching Basic Writing Skills

ENG/ENE 673 Teaching Creative Writing

Thesis — 6 hours

ENG 798-799 Thesis

Electives — Any graduate course available in Art History

English

Mass Communications

Theatre and Dramaturgy

GRADUATE COURSES IN ENGLISH (ENG)

For descriptions of the following courses, please refer to PART XII of this bulletin, Interdisciplinary and Cooperatively Offered Graduate Degrees, Department of English and Division of Teacher Education:

ENG 553 Studies in Linguistics

ENG 600 Advanced Writing and Research Reporting

ENG 617 Major Literary Modes

ENG/ENE 632 Applied English

Linguistics

ENG/ENE 636 Teaching Composition

ENG/ENE 637 Mass Media and the Teaching of English

ENG/ENE 643 Teaching Basic Writing Skills

ENG 798-799 Thesis

666 Creative Writing: Fiction. Semester course; 3 workshop hours. 3 credits. Prerequisite: graduate standing in M.F.A. program or permission of the director of

*Each of these courses may be repeated for a maximum of six hours.

creative writing. Study of the craft of fiction writing, with the goal of producing professionally acceptable and publishable fiction. Workshop members shall produce a substantial volume of writing—short stories or a portion of a novel—and in addition shall be able to evaluate and articulate the strength of their own work. May be repeated for credit.

667 Creative Writing: Poetry. Semester course; 3 workshop hours. 3 credits. Prerequisite: graduate standing in M.F.A. program or permission of the director of creative writing. Study of the craft of poetry writing, with the goal of producing professionally acceptable and publishable poetry. Workshop members shall produce a substantial amount of poetry and in addition shall be able to evaluate and articulate the strength of their own work. May be repeated for credit.

668 Creative Writing: Drama. Semester course; 3 workshop hours. 3 credits. Prerequisite: graduate standing in M.F.A. program or permission of the director of creative writing. Study of the craft of playwriting with the goal of producing plays that are suitable for production. Workshop members shall produce a substantial volume of writing—one-act plays, or a portion of a longer play. They shall, in addition, be able to evaluate and articulate the strength of their own work. May be repeated for credit.

670 Literary Editing and Publishing. Semester course; 3 lecture hours. 3 credits. A course in which the student learns to edit fiction, poetry, drama, or non-fiction. Genre covered will vary from semester to semester. Attention will be paid to the ways in which editors work with writers in all the technical aspects of editing, revising, and publishing. Ethical responsibilities of editors to authors and their texts will be stressed. Questions centering on the publishing world at large will be considered. May be repeated for credit.

671 Film and Television Scripts. Semester course; 3 lecture hours. 3 credits. Study of the theory and practice of producing shooting scripts for television and motion pictures. Emphasis will be placed on the various kinds of scripts most commonly used by directors and cinematographers (e.g. silent, narrated, and dramatized). Attention will also be paid to the ways in which script writers adapt material to audiences, and the ways in which strict time frames are imposed on scripts. Students will write scripts of various kinds and lengths.

672 Writing Non-fiction. Semester course; 3 lecture hours. 3 credits. Study and practice of writing one or more modes of non-fiction on the professional or pre-professional level, under critical supervision. Emphasis will be placed on such matters as organization, style, revision, and adaptation to particular audiences and publications. Possible kinds of writing could include reports; writing based on statistics; writing textbooks; writing separate chapters of books, and writing reviews, criticism, and advocacy materials. May be repeated for credit.

ENG/ENE 673 Teaching Creative Writing. Semester course; 3 lecture hours. 3 credits. A comparative analysis of different approaches to the teaching of creative writing. Attention will be paid to the different ways in which elements such as dialogue, sound pattern, scene development, line break, meter, voice, and

distance can be taught. The course is intended for those who teach or plan to teach creative writing at the community college or college level, or in the public schools.

School of Mass Communications

See School of Mass Communications at beginning of this section

Department of Mathematical Sciences

FACULTY

- Allan, Richard E. *Associate Professor* Ph.D., George Peabody College; numerical analysis.
- Ames, James E., IV *Assistant Professor (Mathematical Sciences)*¹ Ph.D., Duke University; computer science.
- Bauer, David F. *Associate Professor* Ph.D., University of Connecticut; probability and statistics.
- Berglund, John F. *Professor* Ph.D., Tulane University; topological algebra and harmonic analysis.
- Clark, Rhonda R. *Assistant Professor* Ph.D., University of North Carolina at Chapel Hill; biostatistics.
- Deveney, James K. *Associate Professor* Ph.D., Florida State University; commutative algebra.
- Farley, Reuben W. *Professor and Associate Chairman* Ph.D., University of Tennessee; topological algebra.
- Glynn, William A. *Professor and Associate Dean* Ph.D., Oklahoma State University; topology.
- Ha, Cu D. *Assistant Professor* Ph.D., University of Wisconsin, Madison; operations research.
- Haver, William E. *Professor and Chairman* Ph.D., State University of New York, Binghamton; geometric topology.
- Henry, Neil W. *Associate Professor (Sociology and Anthropology)*¹ Ph.D., Columbia University; multivariate statistics and mathematical social sciences.
- Jacqmin, Nancy E. *Assistant Professor* Ph.D., Stanford University; operations research.
- Johnson, Robert E. *Assistant professor* Ph.D., University of North Carolina at Chapel Hill; statistics.
- Koutrouvelis, Ioannis A. *Associate Professor* Ph.D., State University of New York at Buffalo; probability and statistics.
- Lohr, C. Michael *Associate Professor* Ed.D., University of Virginia; mathematical education.
- Mandeli, John P. *Assistant Professor* Ph.D., Cornell University; experimental design and applied statistics.
- Minton, Paul D. *Professor (Biostatistics; Director, Institute of Statistics)*¹ Ph.D., North Carolina State University; distribution theory and applications in medical research.
- Morris, J. Richard *Associate Professor* Ph.D., University of Alabama; topology.
- Parker, Lorraine *Assistant Professor* Ph.D., University of Wales, Great Britain; computer science.
- Raychowdhury, Pratip N. *Professor* Ph.D., George

¹Department in parentheses indicates joint appointment.

Washington University; applied mathematics and mathematical physics.

Schedler, David A. *Associate Professor* Ph.D., George Washington University; topology.

Schmeelk, John F. *Assistant Professor* Ph.D., George Washington University; applied mathematics.

Scott, Larry *Assistant Professor* Ph.D., Kansas State University; applied statistics.

Seidel, Steven R. *Assistant Professor* Ph.D., University of Iowa; computer science.

Tucker, John R. *Assistant Professor* Ph.D., George Washington University; applied mathematics.

Wood, James A. *Associate Professor* Ph.D., University of Virginia; functional analysis.

The Department of Mathematical Sciences offers a program leading to a Master of Science degree with several possible areas of specialization including applied mathematics, computer science, mathematics, statistics, statistical computing, applied computational mathematics, discrete structures, and others.

The department also offers the Master of Education in mathematics education and the Mathematical Sciences Certificate in computer science.

ADMISSION REQUIREMENTS

In addition to the general requirements for admission to graduate programs in the School of Graduate Studies (Part I of this bulletin) and the College of Humanities and Sciences, the following represent the minimum acceptable standards for admission:

1. Thirty semester credits in undergraduate mathematical sciences or related areas of which at least 18 semester credits must represent upper-level courses.
2. Three letters of recommendation pertaining to the student's potential ability as a graduate student in mathematical sciences.
3. Graduate Record Examination scores, including those of the advanced examination in one of the mathematical sciences.

Provisional admission may be granted when deficiencies exist. These deficiencies must be removed by the end of the first year of residence, or its part-time equivalent, at which time the student's application will be re-examined. Courses which are remedial or designed to remove deficiencies will not be

accepted for credit toward the fulfillment of the course requirements for the master's degree.

DEGREE REQUIREMENTS

The program offers maximum flexibility by allowing each student, in consultation with his or her graduate committee, to design a course of study which will best develop competence in those areas most relevant to his/her scholarly and professional objectives. This program consists of a minimum of 30 semester credits of which at least half must be at the 600 level. Each student will select either the thesis or non-thesis option. The student who elects the non-thesis option must pass a written examination and may be asked to take an oral examination.

PROGRAM LEADING TO THE MASTER OF SCIENCE DEGREE IN MATHEMATICAL SCIENCES

Non-Thesis Option

	<i>Credits</i>
Mathematical Sciences	21
(Including both semesters of a 600 level sequence)	
Mathematical Sciences or Allied Field ²	6—9
Research Seminar Credits ³	2—4
Directed Research Credits ³	0—2
	30

Thesis Option

Mathematical Sciences	18
(Including both semesters of a 600-level sequence)	
Mathematical Sciences or Allied Field ²	6—9
Thesis Credits	3—6
Research Seminar Credits ³	1—3
Directed Research Credits ³	0—2
	30

M.S. Degrees in the Mathematical Sciences

Students may obtain a designation on their transcript indicating that their graduate study has emphasized one of the following graduate tracks by completing the requirements that are listed here for that track. A student who has not satisfied the requirements for one of these tracks, but who has

²Courses selected from an allied field must be approved by the department's Graduate Affairs Committee.

³The student who chooses the nonthesis option may receive a *maximum* total of four credits for 690 Research Seminar and 697 Directed Research. The student who chooses the thesis option usually will not take directed research, but is not prohibited from doing so. In the thesis option a total of seven credits for thesis, research seminar, and directed research is the maximum credit permitted.

otherwise fulfilled all the requirements for a master's degree, will be awarded a degree of Master of Science in mathematical sciences without any specialty track designation.

1. **M.S. in Mathematical Sciences/Applied Mathematics.** MAT 517-518*, a 6-credit sequence selected from MAT 617-618, 619, 620, 621, and at least 6 credits selected from MAT 511, 512, 515, 516, 527, 528, 698, 699, CSC 501, 615, STA 513-514. Also, at least one seminar and the thesis (if chosen) must concern topics of applied mathematics.
2. **M.S. in Mathematical Sciences/Computer Science.** CSC 504, 505, 602, 621, and one other approved 600-level computer science course. Also, at least one seminar and the thesis (if chosen) must concern topics of computer science.
3. **M.S. in Mathematical Sciences/Mathematics.** MAT 507-508*, a 6-credit sequence selected from MAT 601-602, 603-604, 607-608, 611-612, or 609 taken twice, and at least 3 credits selected from MAT 505, 509, 510, 521, 525, or any otherwise uncounted 600-level course for this track. Also, at least one seminar and the thesis (if chosen) must concern topics of pure mathematics.
4. **M.S. in Mathematical Sciences/Statistics.** STA 513-514*, 3 additional credits selected from STA 503, 523, 543, 544, and at least 6 credits selected from STA 613-614, 623, 643, or approved advanced courses in Biostatistics (BIS). Also, at least one seminar and the thesis (if chosen) must concern topics of statistics.

Other Postbaccalaureate Programs in Mathematical Sciences. For students who hold bachelor's degrees in appropriate areas, the Department of Mathematical Sciences offers the following alternative postbaccalaureate degree programs.

Master of Education in Mathematics Education. For information about the graduate program in mathematics education, see the School of Education section of this bulletin.

Mathematical Sciences Certificate in Computer Science. The Department of Mathematical Sciences offers a certification program in computer science for students who have received bachelor's degrees in other areas and wish to undertake a study of computer science. This program, while placing major concentration on computer science, also requires the student to gain exposure to other mathematical sciences. Students who gain certification through the program are

well suited for many professional opportunities available in the scientific community and with government agencies. Further, the certification process is designed to allow interested students to prepare for graduate study in computer science.

Students seeking more information or wishing to enter the certificate program should contact the chairman of the Department of Mathematical Sciences.

GRADUATE COURSES IN MATHEMATICS (MAT)

505 Modern Geometry. Semester course; 3 lecture hours. 3 credits. Prerequisite: MAT 307. Co-requisite: MAT 310. Topics in Euclidean, projective, and non-Euclidean geometries from a modern viewpoint.

507-508 Analysis I, II. Continuous course; 3 lecture hours. 3-3 credits. Prerequisites: MAT 211, 307, and 310 or permission of instructor. Theoretical aspects of calculus, sequences, limits, continuity, infinite series, series of functions, integration, differential geometry.

509-510 General Topology I, II. Continuous course; 3 lecture hours. 3-3 credits. Prerequisite: MAT 211. Foundations and fundamental concepts of point-set topology. Topological spaces, convergence, connected sets, compactness, product spaces, quotient spaces, function spaces, separation properties, metrization theorems, mappings, compactification.

511 Applied Linear Algebra. Semester course; 3 lecture hours. 3 credits. Prerequisite: MAT 310. The algebra of matrices, the theory of finite dimensional vector spaces, and the basic results concerning eigenvectors and eigenvalues, with particular attention to applications.

512 Applied Complex Analysis. Semester course; 3 lecture hours. 3 credits. Prerequisite: MAT 507 or 517. The algebra and geometry of complex numbers, analytic functions, integration, series, contour integration, analytic continuation, conformal mapping, with particular attention to applications.

515 Numerical Analysis I. Semester course; 3 lecture hours. 3 credits. Prerequisites: MAT 301 and CSC 201. Solution of equations, interpolation and approximations, numerical differentiation and integration, and numerical solution of initial value problems in ordinary differential equations. Selected algorithms will be programmed for solution on computers.

516 Numerical Analysis II. Semester course; 3 lecture hours. 3 credits. Prerequisites: MAT 310 and 515. The solution of linear systems by direct and iterative methods, matrix inversion, the evaluation of determinants, and the calculation of eigenvalues and eigenvectors of matrices. Application to boundary value problems in ordinary differential equations. Introduction to the numerical solution of partial differential equations. Selected algorithms will be programmed for solution on computers.

517-518 Methods of Applied Mathematics. Continuous course; 3 lecture hours. 3-3 credits. Prerequisite: MAT

*If a student previously received credit for one or both of these courses or their equivalent, then one or two of the other courses mentioned for this track must be taken as substitute(s) to satisfy the minimum requirement of 15 credit hours of course work in the track.

301. Vector analysis, matrices, complex analysis, special functions, Legendre and Hermite polynomials. Fourier series, Laplace transforms, integral equation, partial differential equations, boundary-value, and initial-value problems.

520 Game Theory and Linear Programming. Semester course; 3 lecture hours. 3 credits. Prerequisite: MAT 310. The mathematical basis of game theory and linear programming. Matrix games, linear inequalities and convexity, the minimax theorems in linear programming, computational methods, and applications.

521 Introduction to Algebraic Number Theory. Semester course; 3 lecture hours. 3 credits. Prerequisite: MAT 401. Introduction to algebraic numbers and algebraic number fields with emphasis on quadratic and cyclotomic fields. Units, primes, unique factorization.

525 Introduction to Combinatorial Mathematics. Semester course; 3 lecture hours. 3 credits. Prerequisites: MAT 211, 310, or permission of instructor. Introduction to the problems and methods of solution in the enumeration, existence, and construction of some discrete mathematical structures. Discussion of generating functions, recurrence relations, Ramsey's theorem, matching theory, combinatorial designs, Latin squares, and linear coding theory.

527-528 Mathematical Foundations of Operations Research. Continuous course; 3 lecture hours. 3-3 credits. Prerequisites: CSC 201, MAT 309, 310 (second semester), or equivalent; STA 403 strongly recommended for second semester. Introduction to the mathematical foundations of deterministic and stochastic operations research, including the simplex method for linear programming, nonlinear optimization, dynamic programming, and some stochastic models. Real world applications will be discussed throughout.

530 The Development of Modern Mathematics. Semester course; 3 lecture hours. 3 credits. Prerequisite: 17 credits at the 200 level or above in the mathematical sciences. A descriptive survey of modern mathematics: its development, rationale, and influence. A concise review of the history of mathematics will be followed by the study of several major ideas relevant to present-day mathematics. Subjects will vary, but will usually include the following: the advent of pure abstraction; difficulties in the logical foundations of mathematics; the impact of mathematics on twentieth century science; and the computer revolution.

601-602 Abstract Algebra I, II. Continuous course; 3 lecture hours. 3-3 credits. Prerequisite: MAT 401. A study of algebraic structures (including groups, rings, and fields), Galois theory, homomorphisms, subalgebras, direct products, direct decompositions, subdirect decompositions, free algebras, varieties of algebras.

603-604 Advanced Probability Theory. Continuous course; 3 lecture hours. 3-3 credits. Prerequisites: MAT 508 and STA 503 or 513 or BIS 545. A measure-theoretic approach to the theory of probability. Borel sets, probability measures, and random variables. Special topics include characteristic functions, modes of convergence, and elements of stochastic processes.

607-608 Real Analysis I, II. Continuous course; 3 lec-

ture hours. 3-3 credits. Prerequisite: MAT 508. The real number system, Lebesgue measure, functions of bounded variation, differentiation and integration, the L spaces, introduction to Banach and Hilbert spaces, general measure theory, and the Lebesgue-Stieltjes integral.

609 Topics in Topology. Semester course; 3 lecture hours. 3 credits. May be taken twice for credit. Prerequisites: MAT 509-510 and permission of instructor. Special topics in topology selected from such subjects as advanced general topology, algebraic topology, topological algebra, and differential topology.

611-612 Complex Analysis I, II. Continuous course; 3 lecture hours. 3-3 credits. Prerequisite: MAT 508. Elementary functions, analyticity, Cauchy's theorem and integral formula, Taylor and Laurent series, poles, residues, analytic continuation, Riemann surfaces, periodic functions, conformal mapping, and applications.

617-618 Applied Mathematics I, II. Continuous course; 3 lecture hours. 3-3 credits. Prerequisites: MAT 517 and 518. Partial differential equations; equations of Helmholtz, Laplace, and Poisson; the diffusion equation, integral transforms, Green's function methods, calculus of variation, eigenvalues and eigenfunctions by variational methods, integral equations, Fredholm and Volterra equations, and Fredholm and Hilbert-Schmidt theories.

619 Operational Methods. Semester course; 3 lecture hours. 3 credits. Prerequisite: MAT 508. Transform methods applied to existence theory, explicit solutions to problems of mathematical physics, distributions of Schwartz and Gelfand-Silov; kernel theorems of Schwartz, mathematical framework of quantum field theory.

620 Theory of Partial Differential Equations. Semester course; 3 lecture hours. 3 credits. Prerequisites: MAT 301 and 508. Classification of partial differential equations; elliptic, hyperbolic, and parabolic equations; potential theory, techniques of solving various partial differential equations; applications to electromagnetism and solid mechanics.

621 Boundary Value Problems. Semester course; 3 lecture hours. 3 credits. Prerequisites: MAT 517-518. Survey of boundary value problems, approximate analytic solutions such as Galerkin's method and the Ritz method; application to heat transfer, fluid mechanics, and potential theory.

631 Topics in Algebra. Semester course; 3 lecture hours. 3 credits. May be taken twice for credit. Prerequisites: MAT 601, 602, or permission of instructor. A detailed study of one or more areas of modern algebra. Possible areas include finite groups, infinite abelian groups, semigroups, non-commutative rings, and transcendental field extensions.

639 Studies in Operations Research. Semester course; 3 lecture hours. 3 credits. Prerequisites: at least one graduate-level course in mathematical sciences pertaining to the study area and permission of instructor. Selected areas in operations research will be studied, such as integer programming, nonlinear programming, large scale systems, stochastic models.

690 Research Seminar. Semester course; 1 credit. Prerequisite: graduate standing. Discussions of topics in the mathematical sciences as stimulated by independent reading in selected areas and at least one oral presentation by each student. May be taken more than once for credit.

697 Directed Research. Semester course; 1 credit. Prerequisite: graduate standing. Supervised individual research and study in an area not covered in the present curriculum or in one which significantly extends present coverage. Research culminates with an oral presentation to the department and submission of a written version of this presentation to the supervising faculty member. May be taken more than once for credit.

698-699 Thesis. Continuous course; 1-3 credits per course. Credits and hours to be arranged. Prerequisite: graduate standing. Independent research culminating in the writing of the required thesis as described.

GRADUATE COURSES IN COMPUTER SCIENCE (CSC)

500 Computer Methods for Research. Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: one year of college mathematics. Introduction to programming in several computer languages including FORTRAN IV. Survey of applications packages such as SAS and SPSS. Each student's assignment will include applications programs in his major field. Not applicable toward M.S. degree in mathematical sciences.

501 Data Structures. Semester course; 3 lecture hours. 3 credits. Prerequisites: CSC 202, 301, and 311. Basic concepts of data, list structures, strings, and arrays. Representation of trees and graphs. Storage systems and methods of storage allocation and collection. Multi-linked structures. Symbol tables, search techniques, and sorting techniques. Formal specification of data structures.

503 Programming Languages. Semester course; 3 lecture hours. 3 credits. Prerequisites: CSC 202, 301, and 311. Formal definition of programming languages including specification of syntax and semantics. Precedence, infix, prefix, and postfix notation. Global properties of algorithmic languages. Sub-routines, co-routines, and tasks. List processing, string manipulation, data description, and simulation languages. Run-time representation of program and data structures.

504 Compiler Construction. Semester course; 3 lecture hours. 3 credits. Prerequisites: CSC 501 and 503. Review of program language structures, translation, loading, execution, and storage allocation. Compilation of simple expressions and statements. Organization of a compiler. Use of compiler writing languages and bootstrapping.

505 Computer Organization. Semester course; 3 lecture hours. 3 credits. Prerequisites: CSC 311 and 312. Basic digital circuits. Boolean algebra and combinational logic, data representation and transfer, and digital arithmetic. Digital storage and accessing, control function, input-output facilities, system organization, and

reliability. Description and simulation techniques. Features needed for multiprogramming, multiprocessing, and real time systems. Other advanced topics and alternate organizations.

511 Computer Graphics. Semester course; 3 lecture hours. 3 credits. Prerequisites: CSC 302 or 501, or permission of instructor. Mathematical techniques for picture development and transformation, curve and surface approximation and projections, graphical languages and data structures and their implementation, graphical systems (hardware and software).

554 Applications of Computers in the Teaching of Mathematics I. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: a college calculus course or permission of instructor. Introduction to computers and programming using the language, BASIC. Applications of the computer in algebra, geometry, trigonometry, statistics, and calculus. Not applicable toward M.S. degree in mathematical sciences.

555 Applications of Computers in the Teaching of Mathematics II. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: CSC 554. Continuing study of computer applications in the BASIC language to typical mathematical problems arising in practical settings. The most commonly encountered difficulties in solving scientific problems are discussed. Not applicable toward M.S. degree in mathematical sciences.

601 Systems Programming. Semester course; 3 lecture hours. 3 credits. Prerequisites: CSC 501 and 505. A study of concepts and techniques of systems programming. Hardware concepts and technologies. I/O programming and interrupt processing.

602 Operating Systems. Semester course; 3 lecture hours. 3 credits. Prerequisite: CSC 601. A study of modern operating systems. Resource management including: processor management, memory management, device management, and information management. Multiprogramming, multiprocessing, timesharing, real time, and related concepts. System performance evaluation. Security.

615 Topics in Numerical Analysis. Semester course; 3 lecture hours. 3 credits. May be taken twice for credit. Prerequisites: MAT 515-516, CSC 201, and permission of instructor. Special topics in computer methods for numerical analysis selected from such subjects as analysis of numerical methods for solving ordinary differential equations; elliptic, hyperbolic, and parabolic partial differential equations; solutions of large linear systems by iterative methods.

621 Introduction to the Theory of Computation. Semester course; 3 lecture hours. 3 credits. Prerequisite: CSC 504 or permission of instructor. An introduction to automata theory and formal languages. Topics include finite state machines, regular sets, regular expressions, context-free grammars, pushdown automata, pumping lemmas, Turing machines, closure properties, decidability.

691 Special Topics in Computer Science. Semester course; 3 lecture hours. 3 credits. Prerequisites: at least one graduate-level computer science course pertaining to the topic area, and permission of instructor. Selected

topics in computer science from such areas as data base management, communications, advanced computer architecture, analysis of algorithms, program correctness, computational complexity. May be taken more than once for credit.

GRADUATE COURSES IN STATISTICS (STA)

503 Introduction to Stochastic Processes. Semester course; 3 lecture hours. 3 credits. Prerequisites: MAT 307 and 309. A continuation of topics given in MAT 309. An elementary introduction to stochastic processes and their applications, including Markov chains and Poisson processes.

513-514 Mathematical Statistics. Continuous course; 3 lecture hours. 3-3 credits. Prerequisite: MAT 307. Probability, discrete and continuous distributions, moment generating functions, limit theorems, estimation, decision theory and testing hypotheses, relationships in a set of random variables, linear models, and design.

523 Nonparametric Statistical Methods. Semester course; 3 lecture hours. 3 credits. Prerequisites: any two semesters of statistics or permission of instructor. Estimation and hypothesis testing when the form of the underlying distribution is unknown. One-, two-, and k-sample problems. Test of randomness, Kolmogorov-Smirnov tests, analysis of contingency tables, and coefficients of association.

533 Applied Linear Regression. Semester course; 3 lecture hours. 3 credits. Prerequisites: any two semesters of statistics and one semester of calculus. An introduction to the concepts and methods of regression analysis, including simple linear regression and correlation, multiple regression and correlation. Application of the multiple regression model to the analysis of variance.

543-544 Statistical Methods. Continuous course; 2 lecture and 1 laboratory hour. 3-3 credits. Prerequisites: any two semesters of statistics or permission of instructor. Statistical methods including analysis of variance, regression, correlation, and distribution-free methods. Includes use of statistical packages.

613-614 Stochastic Processes. Continuous course; 3 lecture hours. 3-3 credits. Prerequisites: MAT 508 and STA 514 or BIS 545. Introduction to the theory and applications of stochastic processes. Random walks, Markov processes, queuing theory, renewal theory, birth-death and diffusion processes. Time series, spectral analysis, filter, autocorrelation. (Offered in conjunction with the biostatistics department.)

623 Discrete Multivariate Analysis. Semester course; 3 lecture hours. 3 credits. Prerequisites: STA 543, BIS 511, or permission of instructor. Methods for the analysis of contingency tables. Emphasis on social and biomedical applications of the general log-linear model.

691 Special Topics in Statistics. Semester course; 1-3 lecture hours. 1-3 credits. Prerequisite: permission of instructor. A detailed study of selected topics in statistics. May be repeated for a maximum of six credits.

Department of Psychology

FACULTY

Auerbach, Stephen M. *Associate Professor and Director of the Doctoral Program in Clinical Psychology* Ph.D., Florida State University; stress and crisis intervention, health psychology-behavioral medicine.

Bailey, Kent C. *Professor* Ph.D., West Virginia University; individual tests of intelligence, psychotherapy research methodology.

Buczek, Teresa *Assistant Professor* Ph.D., Bowling Green State University; psychology of women, family therapy.

Corazzini, Jack G. *Associate Professor* Ph.D., University of Notre Dame; college counseling.

Erickson, Marilyn T. *Professor* Ph.D., University of Washington; child psychopathology; assessment, etiology, and treatment.

Farrell, Albert D. *Assistant Professor* Ph.D., Purdue University; behavioral assessment, experimental design, social skills training, computerized assessment.

Forsyth, Donelson R. *Assistant Professor* Ph.D., University of Florida; social psychology, attitudes and social cognition, group processes.

Hamm, Robert J. *Associate Professor and Director of the Doctoral Program in General-Experimental Psychology* Ph.D., Southern Illinois University; operant conditioning, stress reactions, animal behavior.

Hartnett, John J. *Associate Professor* Ph.D., Wayne State University; social-industrial psychology, person perception, job satisfaction, selection, classification.

Hawkes, Glenn R. *Professor* Ph.D., University of Virginia; sensation and perception, parapsychology, hypnosis.

Hill, John P. *Professor and Chairman* Ph.D., Harvard University; psychosocial consequences of pubertal status, family and peer relations in early adolescence.

Hooke, James F. *Assistant Professor* Ph.D., University of Nebraska; neuropsychological evaluation, objective assessment of personality.

Hornbuckle, Phyllis A. *Associate Professor* Ph.D., Emory University; biopsychology, motivation, emotion, animal behavior.

Kallman, William M. *Associate Professor* Ph.D., University of Georgia; behavioral assessment and therapy, psychophysiology, behavioral medicine.

Kiesler, Donald J. *Professor* Ph.D., University of Illinois; communication approaches to psychotherapy, personality.

Leahey, Thomas H. *Associate Professor* Ph.D., University of Illinois; history and philosophy of psychology; cognitive science, sociobiology.

McCullough, James P. *Associate Professor* Ph.D., University of Georgia; behavior therapy, psychophysiology of psychotherapy.

McGovern, Thomas V. *Associate Professor* Ph.D., Southern Illinois University; group therapy, adult development, ethics.

Mahoney, John M. *Associate Professor* Ph.D., State University of New York-Buffalo; social psychology, values, individual differences.

Myers, Barbara J. *Assistant Professor* Ph.D., Temple University; infancy and early childhood, social development, medical problems in infants.

Olsho, Lynn W. *Assistant Professor* Ph.D., Loyola University of Chicago; developmental perceptual processes.

Olson, Sandra K. *Assistant Professor* Ph.D., University of Missouri at Columbia; vocational psychology, adult development.

Parham, Iris A. *Associate Professor* Ph.D., University of Southern California; psychology of aging, developmental psychology.

Porter, Joseph H. *Associate Professor* Ph.D., University of Georgia; neural mechanisms of hunger and thirst, adjunctive behavior, behavioral pharmacology, animal behavior.

Spencer, Nancy J. *Associate Professor* Ph.D., The Pennsylvania State University; cognitive psychology, psycholinguistics.

Stolberg, Arnold L. *Assistant Professor* Ph.D., University of South Florida; community clinical psychology.

Strong, Stanley R. *Professor* Ph.D., University of Minnesota; social processes in counseling psychology.

Tipton, Robert M. *Professor and Director of the Doctoral Program in Counseling Psychology* Ph.D., University of Missouri; personality and ability assessment, cognitive approaches to counseling and psychotherapy.

Worthington, Everett L. *Assistant Professor* Ph.D., University of Missouri; behavioral self-control, theories and methods of counseling.

Emeritus Professors: William D. Groman; Edwin R. Thomas

Associate Clinical Professor: Resnick

Assistant Clinical Professors: Biskin; Browne; Crowe; B. Eberly; C. Eberly; Fagan; Hirschman; Johnson; Keeney; Lira; Macurik; Master; McLaughlin; Morgan; Moss; Norwood; Peck; Feed; Shenoy; Sitarz; Taylor

The Department of Psychology offers instruction in clinical, counseling, and general psychology leading to the Master of Science and Doctor of Philosophy degrees. The doctoral programs in clinical and counseling psychology have been fully accredited by the American Psychological Association.

The clinical psychology program prepares students for research and service in the clinical area. The counseling psychology program prepares students for research and service in the counseling area. Students in either clinical or counseling psychology may elect courses in education as well as psychology that will make it possible to become certified as a school psychologist.

The program in general psychology prepares students for either basic or applied-research in physiological, developmental, and social psychology.

All three doctoral programs provide opportunities for selected students who are interested in college teaching to obtain special

training and experience in that activity. All three master's programs prepare students for additional graduate study as well as for work in related areas. The Psychological Services Center, operated by the department, is located on campus and serves as a clinical practicum facility.

An outstanding collection of current journals and books in psychology is housed in the James Branch Cabell Library on the Academic Campus and in the Tompkins-McCaw Library on the MCV Campus.

Teaching assistantships are available. The amount of the stipend is dependent upon the amount of service required.

ADMISSION REQUIREMENTS

In addition to the general requirements for admission to the graduate programs in the School of Graduate Studies (Part I of this bulletin) the following requirements represent the minimum acceptable standards for admission:

1. Graduation with a bachelor's degree from an accredited college or university, but not necessarily with a major in psychology.
2. Eighteen semester hours of undergraduate course work in psychology is the minimum but *not* the optimal number of hours for an applicant to be considered for admission. Included must be each of the following courses: general psychology, applied statistics, and experimental psychology. Exceptionally well qualified applicants with less than a major in psychology, or applicants whose undergraduate work is considered outdated by the admissions committee, may be advised to complete some additional undergraduate courses at the beginning of their graduate study program.
3. An undergraduate record indicating superior academic potential.
4. Satisfactory performance on the Graduate Record Examination, including the special psychology examination.
5. Three letters of recommendation from previous instructors.
6. A personal interview may be required at the discretion of the department.

Application forms for admission to graduate study, application forms for

assistantships, and brochures describing the special programs of interest as noted above, are available on request from the department. Applications should be filed early to permit review and to insure consideration.

The number of students who can be admitted is limited by the facilities and staff available. All students will be notified of the decision made. In the areas of clinical and counseling psychology, where the number of applicants is many times greater than the number that can be admitted, the screening process may begin as early as January 1. First offers of admission are made on April 1 and by June 1, after other offers to alternates have been made and final acceptances by students have been received, admissions to clinical and counseling psychology may be closed. Clinical and counseling psychology applications that are not completed by March 1 may not reach the department in time to be considered. Because most of the openings must be reserved for beginning graduate students, relatively few applicants who already possess master's degrees can be admitted. In other areas of psychology where the number of applicants is not as large and the number of openings is larger, applications may be completed and processed up to July 1 for regular registration, but after that date for special registration only.

Transfer credits for graduate work at other institutions will be evaluated after the completion of nine semester hours in the department.

DEGREE REQUIREMENTS

All students are required to complete the core curriculum of 14 credits, which includes a course in either the biological basis of behavior or sensation and perception; a course in either learning or cognitive processes; and courses in applied statistics, experimental design, and ethical principles of psychology. Additional courses will be chosen in consultation with an advisor appropriate to the student's field of interest.

Candidates must complete all requirements for a degree within a seven-year period from the date of admission to the program.

Completion of the core curriculum is equivalent to a comprehensive examination

at the master's level. A preliminary examination is required at the doctoral level.

Receipt of two grades of "C" or lower in courses, or grades of "C" or lower in more than six credits of psychology courses, constitutes automatic dismissal of a student from the program.

The residence requirement for the master's degree is 18 hours, nine in each of two consecutive semesters. Completion of the degree usually requires three or four semesters.

Students are obligated to request, in writing from their program committees, continuation of study beyond the master's degree. Application from a student for continuation beyond the master's level will be evaluated by the appropriate program committee after completion of all requirements for the master's degree. The program committee reviews the student's request and approves or disapproves the request. The faculty will be notified of the decision and will be given the opportunity to review.

The residence requirement for the doctoral degree is an additional 18 hours, nine in each of two consecutive semesters following completion of the master's degree. Completion of the entire program usually requires three to four years in the general program, and four to five years in the clinical or counseling programs, including the internship year.

With the consent of the program committee, doctoral students may design a minor consisting of courses in departments other than psychology or courses in an area of psychology other than major.

Practica and internships will be required whenever these additional skills are consistent with the major emphasis of the student's program. Practicum credit will vary depending on the program. Internship will be without credit.

Before undertaking the dissertation a doctoral candidate must demonstrate either a reading knowledge in one foreign language or proficiency in computer programming. Credits for courses taken to prepare for or to satisfy the language or programming requirement do not count as course credits toward the degree.

All Master of Science candidates are required to complete a thesis and to defend it

successfully in an oral examination. A dissertation requiring the planning, completion, and defense of an original research project is an integral part of the doctoral program.

The minimal requirements specified for a graduate degree may not meet licensing standards in various states. Information on current Virginia laws regulating the practice of psychology may be obtained from the Department of Psychology.

GRADUATE COURSES IN PSYCHOLOGY (PSY)

601 Behavior Therapy. Semester course; 3 lecture hours. 3 credits. Prerequisites: graduate standing in psychology and permission of instructor. Group and individual approaches in these general areas will be emphasized: observational techniques; counterconditioning and extinction procedures; techniques of positive and negative control; self-control procedures; use of modeling and roleplaying as change techniques; behavioral feedback and cueing procedures.

602/Gerontology 602 Psychology of Aging. Semester course; 3 seminar hours. 3 credits. Prerequisite: permission of instructor. Psychological adjustment in old age; special emphasis on personality, cognitive, and emotional development; life crises associated with the aging process.

603 Developmental Processes. Semester course; 3 lecture hours. 3 credits. Cognitive, social, personality, and behavioral development across the life span is considered, with special attention to theories of development.

604 Social Psychology of Business and Industry. Semester course; 3 lecture hours. 3 credits. The theme is the influence of organizational structure on behavior. Topics will include motivation, attitudes, job satisfaction, morale, leadership, and supervision.

605 Social Development. Semester course; 3 lecture-seminar hours. 3 credits. Prerequisite: PSY 603 or permission of instructor. The development of social relations, focusing primarily on infancy and childhood, but also considering adulthood and aging. Attachment, parent-child interaction, peers, siblings, aggression, sex-roles, cultural determinants, deprivation and remediation, social cognition, adulthood changes, parenthood. Critical evaluation of theory and current research.

607 Advanced Educational Psychology. Semester course; 3 lecture hours. 3 credits. Application of the principles of psychology to the teaching-learning process. Discussion will focus on the comprehensive development of individual learning experiences and educational programs from the point of view of the educator and the administrator.

608 Individual Tests of Intelligence. Semester course; 3 lecture hours. 3 credits. Prerequisites: graduate standing in psychology and permission of chairman of the department. The administration, scoring, interpreta-

tion, and research foundations of the major individual tests of intelligence, with emphasis on the Wechsler scales and the Stanford-Binet.

609 Design of Psychological Experiments. Semester course; 2 lecture and 2 laboratory hours. 3 credits. The application of analysis of variance, randomization tests, analysis of ranks, and chi-square to designs involving random groups, matched groups, repeated treatment, and repeated measurement, where the dependent variable is behavioral.

610 Attitude Theory and Research. Semester course; 3 lecture hours. 3 credits. Theory and research in attitudes. Attitude formation and change, including cognitive consistency, learning and reinforcement, social judgment, and functional theories.

611 Contemporary Developments in Counseling Psychology. Semester course; 3 seminar hours. 3 credits. Prerequisite: permission of instructor. Contemporary issues, problems, and research related to the practice of counseling psychology; their importance in developing a professional identity and sensitivity to major developments in the field; history, present status, and future directions in the field of counseling psychology.

612 Seminar in Motivation. Semester course; 3 lecture hours. 3 credits. A survey of some theoretical views of motivation. Biological, cultural personality, and learning theories of motivation will be covered. Theoretical positions will be related to current empirical findings.

613 Cognitive Development. Semester course; 3 lecture-discussion hours. 3 credits. Prerequisite: graduate standing in psychology or permission of instructor. The development of the intellectual processes, including reasoning, memory, imagery, and knowledge. Special attention will be given to theories of cognitive growth. Although the focus will be on child cognitive developments, consideration of life-span issues will be included.

614 Infant Growth and Development. Semester course; 3 seminar hours. 3 credits. Prerequisite: PSY 603 or permission of instructor. Sensory and behavioral capacities of the infant; cognitive, social, and emotional development in the first two years of life, with emphasis on the effects of early experience on function later in life. Consideration of the special problems associated with infant research and intervention programs.

615/Gerontology 615 Aging and Mental Disorders. Semester course; 3 lecture-seminar hours. 3 credits. Review of theoretical and empirical research on the psychological disorders and problems of late life. Topics include the etiology of disorders, mental health services, methods of evaluating psychological status, drugs and health issues, and successful intervention approaches with the elderly.

616 Psychopathology. Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. Clinical and experimental contributions to the field of psychopathology, with particular attention to the roles of learning and motivation in the development of behavior disorders.

617 Sensation and Perception. Semester course; 3 lecture hours. 3 credits. The major phenomena of vision,

44 College of Humanities and Sciences

audition, olfaction, gustation, and the skin senses. Psychophysics and the effects of sensory deficits. The relationship of variations in environmental energy to the psychological reactions of sensing and perceiving.

618 Seminar in Personality. Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. A detailed exploration of various approaches in personality. Contemporary issues in personality theory.

619 Seminar in Learning. Semester course; 3 lecture-seminar hours. 3 credits. The major problem areas, methodology, and theories of learning are reviewed. Included are measurement techniques, drive and reinforcement, conditioning, memory, and other cognitive processes.

622 Physiological Correlates of Emotion. Semester course; 3 lecture-seminar hours. 3 credits. Research and theories of emotion emphasizing physiological bases, with special attention to neurological and endocrine systems. Application to psychological functioning.

623 Counseling and Psychotherapy. Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. Exploration of major trends in psychotherapeutic techniques and current research. Principles of therapy applied to personal, social, vocational, and educational problems.

624 Group Counseling and Psychotherapy. Semester course; 3 lecture-seminar hours. 3 credits. Prerequisite: permission of instructor. Historical perspective. Basic dynamics and processes of therapeutic groups. Role and technique of the group facilitator. Examination of different theoretical approaches.

625 Career Counseling: Theory and Practice. Semester course; 3 lecture-seminar hours. 3 credits. Prerequisite: permission of instructor. Review of major theories and current research in career development. Techniques of career counseling for individuals and groups. Emphasis on late adolescent, adult, and pre-retirement populations.

626 Single-Case Experimental Design for the Clinical Research-Practitioner. Semester course; 3 lecture-seminar hours. 3 credits. Prerequisite: permission of instructor. Review of single-case design models that have utility for clinicians in evaluating their practice. Emphases will be placed on the historical development of the field and on the main experimental design issues that are relevant to the conduct of single-case research.

627 Statistics in Psychological Research. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Applications of descriptive and inferential statistics including significance testing and parameter estimation in empirical and experimental research on human and animal behavior.

628 Cognitive Processes. Semester course; 3 lecture-seminar hours. 3 credits. Theory and research in complex human behavior such as speech perception, memory, language structure and function, problem solving, decision making, and information processing.

629 Biological Basis of Behavior. Semester course; 3 lecture-seminar hours. 3 credits. Prerequisite: an undergraduate course in physiological psychology or

permission of instructor. Theory and current experimental research on the physiological and neurological concomitants of behavioral variables.

630 Social Psychology. Semester course; 3 lecture-seminar hours. 3 credits. Topics include attitudes, social influence processes, person perception, affiliation and attraction, group processes, cultural influences on behavior, and conformity.

631 Seminar in Psycholinguistics. Semester course; 3 lecture-seminar hours. 3 credits. Prerequisite: permission of instructor. Theory and hypotheses regarding cognitive processes based on studies of language behavior. Language structure as related to its human functions. Language acquisition and the developing brain. Comparison of language to other systems which represent and communicate.

632 Research Methods in Social Psychology. Semester course; 3 lecture hours. 3 credits. prerequisites: PSY 627 and 630. Epistemological, methodological, technical, and ethical problems encountered during the scientific study of social psychological phenomena. Emphasizes practical experience in theory development, hypothesis derivation, research planning, data collection, reduction and analysis, and dissemination strategies.

633 Group Dynamics. Semester course; 3 lecture-seminar hours. 3 credits. Theoretical explanations and empirical research related to group formation, development, performance, and dissolution. Topics include obedience, conformity, group productivity, and leadership.

634 Attribution Theory and Research. Semester course; 3 seminar hours. 3 credits. Prerequisite: PSY 630 and permission of instructor. How the perceiver uses behavioral data to make inferences concerning the causes of actions and events. Examines theoretical perspectives, current empirical findings, and the implications of attributions for interpersonal relations, psychological adjustment, and self-processes.

636 Research Methods in Developmental Psychology. Semester course; 3 lecture-seminar hours. 3 credits. Prerequisites: PSY 627. Research designs, methods, ethical issues, and problems specific to developmental psychology. Cross-sectional, longitudinal, and sequential strategies. Statistical issues, multivariate statistics, and choice of statistical designs appropriate for developmental research questions. Computer skills in organizing and analyzing data. Grant writing and scientific reporting.

638 The Evolution of Psychological Systems. Semester course; 3 lecture hours. 3 credits. Prerequisite: core course in student's area of specialization or permission of instructor. A survey of the development and present state of various psychological systems. Current meta-theoretical and systematic issues in psychology.

639 Research Methods in Biopsychology. Semester course; 1 lecture and 4 laboratory hours. 3 credits. Prerequisite: permission of instructor. Methodological, technical, and ethical problems in biopsychology. Examples are design and use of circuits in behavioral sciences, stereotaxic surgery, histology, drug procedures, research design, data collection procedures, and data analysis.

641/Gerontology 641 Survey of Psychological Assessment and Treatment of the Older Adult. Semester course; 3 lecture-seminar hours. 3 credits. Prerequisite: permission of instructor. Review of major treatment strategies and techniques for work with the older adult client. Emphasis on individual, group and para-professional delivery systems. Crisis intervention, consultation, and program evaluation approaches will also be presented.

642/Gerontology 642-Practicum in Geropsychology. Semester course; one-half day per credit. 1-3 credits. Prerequisites: PSY 615/GTY 615, PSY 641/GTY 641, and permission of instructor. (PSY 641/GTY 641 may be taken as co-requisite.) A series of training experiences designed to facilitate progressively greater degrees of skills in working with the older adult. Practicum sites will rotate among several community agencies which serve the older adult. Careful supervision and evaluation of the student is provided. May not be counted in minimal total credits for Ph.D. in clinical or counseling psychology.

643 Principles of Psychological Measurement. Semester course; 1 lecture hour. 1 credit. Prerequisite: graduate standing in psychology or permission of instructor. Basic psychometric concepts to prepare the student for subsequent evaluation instruments. Origins and logic of testing, criteria for judging tests, standardization and reliability, and validity and principles of test development and construction.

644 Assessment of Human Intelligence. Semester course; 1 lecture and 2 laboratory hours. 2 credits. Prerequisite: graduate standing in clinical psychology or permission of clinical program committee and instructor. Theory and administration of intelligence tests. Laboratory requires supervised administration, scoring, interpretation, and written reports of individually administered tests of intelligence.

645 Assessment of Psychopathology. Semester course; 3 lecture hours. 3 credits. Prerequisite: graduate standing in clinical psychology or permission of clinical psychology program committee and instructor. Use of objective and projective tests in assessment of psychopathology with special emphasis on the clinical interpretation of the Minnesota Multiphasic Personality Inventory (MMPI), and the administration and clinical interpretation of the Rorschach and Thematic Apperception Test (TAT). Emphasis is also placed on integrative report writing.

646 Projective Techniques. Semester course; 3 lecture hours. 3 credits. Prerequisite: graduate standing in clinical psychology or permission of clinical program committee and instructor. Projective devices for the assessment of personality. Supervised administration, scoring, interpretation, and written reports of individually administered projective personality tests.

647 Neuropsychological Assessment. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: graduate standing in psychology and permission of instructor. Psychological assessment of brain-behavior relationships in the context of neurological or neurosurgical problems. Emphasis is on current modifications of Halstead's tests and on the Reitan-

Indiana Neuropsychological Battery for younger children. Laboratory requires supervised administration, scoring, and interpretations of neuropsychological test batteries.

648 Behavioral Assessment of Clinical Problems. Semester course; 3 lecture-seminar hours. 3 credits. Prerequisite: graduate standing in psychology and permission of instructor. Development, evaluation, use and interpretation of behavioral approaches to the assessment of clinical problems, including self-monitoring, behavioral ratings, and direct observational assessment procedures. Both existing instruments and procedures for designing new instruments will be discussed.

649 Clinical Assessment of Child Disorders. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: PSY 643, 644, and graduate standing in clinical psychology or permission of clinical program committee and instructor. Administration and interpretation of intellectual and personality assessment instruments for children. Laboratory requires supervised administration, scoring, interpretation, and written reports of these assessment instruments.

650 Advanced Child Psychopathology. Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. Principal childhood behavioral abnormalities: mental retardation, psychosis, learning disabilities, speech and language problems, school-related behavioral problems, neurosis, psychosomatic disorders, and juvenile delinquency. Genetic, prenatal, somatic disorders, and juvenile delinquency. Genetic, prenatal, perinatal, postnatal, and social-psychological factors related to etiology. Integration of assessment and treatment methods.

651 Introduction to Clinical Interviewing. Semester course; 1 lecture and 2 laboratory hours. 3 credits. Prerequisite: graduate standing in clinical psychology or permission of clinical psychology program committee and instructor. Basic principles of interviewing as they apply to clinical psychotherapeutic work. Laboratory requires videotaping of simulated psychotherapy sessions, modeled and role-played interviewing situations, skill development and demonstration, and evaluative interpersonal feedback.

666 Crisis Intervention: Theory, Research, and Practice. Semester course; 3 lecture-seminar hours. 3 credits. Prerequisite: graduate standing in psychology or permission of instructor. Review of the development of the concept of psychological crisis and of intervention programs in a range of areas such as sexual assault, natural disasters, telephone hotlines, and medical emergencies. Relevant theory and data from community psychology, laboratory and applied research, sociology, and psychiatry will be considered.

668 Interpersonal Psychotherapy: Social Psychological Analysis. Semester course; 3 lecture-seminar hours. 3 credits. Prerequisite: permission of instructor. Analysis of counseling and psychotherapy as interpersonal influence processes. Applications of social psychological theories and research to the process of therapeutic change; identification of key aspects of the change process and of how these aspects are embodied in current approaches and techniques of counseling and

psychotherapy. Emphasis on experimental methods of studying change processes.

669 Interpersonal Psychotherapy: Communications Analysis. Semester course; 3 lecture-seminar hours. 3 credits. Prerequisite: permission of instructor. Theory and research in nonverbal communication. Communication theories of psychotherapy and a communication analysis of key concepts in psychotherapy.

670 Seminar in Gestalt Therapy. Semester course; 3 seminar hours. 3 credits. Prerequisite: permission of instructor. Philosophical basis, historical background, theoretical formulation, techniques, and application of Gestalt therapy. Students will have the opportunity to practice and observe the techniques.

671 Readings and Research. Semester course; 1-3 credits. Prerequisite: written permission of instructor. Individual study leading to the investigation of a particular problem in systematic fashion under the supervision of a member of the faculty. May be repeated for a maximum of nine credits.

675 Ethical Principles of Psychology. Semester course; 2 lecture hours. 2 credits. A discussion of some of the current problems of interest to psychologists. Particular emphasis on the *Ethical Principles of Psychology*, and the dilemmas encountered in the teaching, research, and applied practice of psychology.

690 Research Seminar. Semester course; 3 lecture hours. 3 credits. An intensive investigation of a specialized research area. Examples include delayed response problems in primates, systematic desensitization in the treatment of phobias, effects of drugs on avoidance learning. Emphasis on techniques and organization of past empirical findings and theoretical formulations. May be repeated for credit.

691 Special Topics. Semester course; 3 lecture-seminar hours. 3 credits. Prerequisite: permission of instructor. Theory, research, and techniques in specialized topics of current interest are presented. May be repeated for credit.

693 Counseling Practicum. Semester course; one-half day per credit. 1-3 credits. A series of training experiences designed to facilitate progressively greater degrees of skill development in counseling psychology. Available only to graduate students in counseling psychology approved by the counseling program committee. May be repeated for a maximum of 10 credits.

694 Clinical Practicum. Semester course; one-half day per credit. 1-3 credits. The graduate student in clinical psychology is given an opportunity to apply and practice interviews and diagnostic and therapeutic skills with clients requiring psychological services. Careful supervision and evaluation of the student is provided. The practicum may be located in a clinic on campus or in a hospital or other agency off campus. Available only to graduate students in clinical psychology approved by the clinical program committee. May be repeated for a maximum of 12 credits.

696 Internship. No credit. Prerequisite: approval of the director of the program involved. The internship is a one-year, full-time assignment, under supervision, to an agency approved by the student's program committee.

798 M.S. Thesis. 1-6 credits. May be repeated.

898 Doctoral Dissertation. 1-12 credits. May be repeated.

Department of Sociology and Anthropology

FACULTY

- Bookin, Hedy *Assistant Professor* Ph.D., Harvard University; criminology, juvenile delinquency.
- Dennis, Rutledge M. *Associate Professor* Ph.D., Washington State University; complex organizations, social stratification.
- Diana, Lewis *Professor* Ph.D., University of Pittsburgh; sociology of the family, human sexuality.
- Franks, David D. *Associate Professor* Ph.D., University of Minnesota; social psychology, sociology of mental health.
- Hartman, David W. *Assistant Professor and Assistant Dean* Ph.D., Wayne State University; American culture, ethnicity, complex societies, Appalachia, urban.
- Henry, Neil W. *Associate Professor* Ph.D., Columbia University; social statistics, mathematical models.
- Honnold, Julie A. *Associate Professor* Ph.D., University of Denver; environmental sociology, sociology of leisure.
- Johnson, Daniel M. *Professor and Chairman* Ph.D., University of Missouri; social indicators, social policy, and demography.
- Levin, Paula F. *Assistant Professor* Ph.D., University of California-San Diego; cultural and psychological anthropology, education and anthropology.
- Marolla, Joseph A. *Associate Professor* Ph.D., University of Denver; social psychology and a sociology of education.
- McGrath, John H., III *Professor* Ph.D., Rutgers University; juvenile delinquency, medical sociology.
- Nelson, Lynn D. *Associate Professor* Ph.D., Ohio State University; environmental sociology.
- Palen, J. John *Professor* Ph.D., University of Wisconsin-Madison; urban sociology and demography.
- Perlman, Stephen M. *Assistant Professor* Ph.D., University of Massachusetts; ecological theory in anthropology, archeology of Eastern United States.
- Schwartzbaum, Allan M. *Associate Professor* Ph.D., Cornell University; industrial sociology, organizational behavior.
- Scully, Diana H. *Assistant Professor* Ph.D., University of Illinois; sociology of medicine, sex roles.
- Studer, Kenneth E. *Assistant Professor* Ph.D., Cornell University; sociology of science, sociology of knowledge.
- Williams, J. Sherwood *Associate Professor* Ph.D., Washington State University; research methods and behavioral sociology.

The Department of Sociology and Anthropology offers programs leading to the degree of Master of Science with specializations in several areas. The goal of the

graduate program in sociology is to facilitate the development of theoretical, methodological, and substantive competence appropriate for students' interests and career goals.

ADMISSION REQUIREMENTS

In addition to the general requirements for admission to graduate programs in the School of Graduate Studies (Part I of this bulletin) and in the College of Humanities and Sciences, the following requirements represent the minimum acceptable standards for admission:

1. Applicants must submit a transcript of their undergraduate course work and the results of their Graduate Record Examination in general aptitude (quantitative, analytical, and verbal) and an advanced area.
2. Admission priority is given to students with an undergraduate grade point average of 3.0 or higher on a 4-point scale. Students with grade point averages below 3.0 will be evaluated by the graduate coordinator and members of the graduate faculty on the basis of the GRE scores, recommendations from references, and other data submitted by applicants.
3. To be admitted as a regular graduate student, applicants should have completed 24 semester hours in the social sciences (including history), with at least 12 credits in sociology. Undergraduate work in sociology should include a survey of sociological theory, research methods, and statistics. Students who are otherwise qualified for admission but lack this background may be admitted provisionally, with the stipulation that they may be requested to make up any deficiencies specified by the graduate coordinator. Nondegree or "special" students must apply for regular student status after completing six sociology graduate credits.

Because of the diversity in different institutions of higher education, students trained abroad may be judged on an individual basis. Criteria on which this judgment is based include the reputation of the foreign university, the student's academic record, proficiency in English, and recom-

mendations from professors. The university requires that foreign students demonstrate guarantees of financial support.

A limited number of assistantships are available for qualified applicants. Applicants for assistantships should have their files complete by March 1. Individuals not applying for assistantships should file their applications for graduate study as early as possible to permit adequate review and to ensure consideration. Applications which reach the university after July 1 for the fall semester and after November 15 for the spring semester may not be processed in time for registration.

DEGREE REQUIREMENTS

There are two options available for students pursuing a master's degree in sociology. Students must receive approval from the graduate student coordinator before choosing either option.

1. **Thesis option:** Thirty hours of graduate course work must be completed including the following core courses: SOC 501 Foundations of Sociological Theory, SOC 502 Contemporary Sociological Theory, SOC 601 Advanced Methods of Social Research, SOC 602 Applications of Advanced Research Methods, and SOC 608 Advanced Statistical Methods. A master's thesis will be developed under the guidance of a thesis committee (three faculty members including a thesis advisor) and must be publicly defended. The student may present up to six thesis credits for graduation.
2. **Concentration option:** Requirements are identical to the thesis option except for the following: a) Students must complete 36 semester hours of course work; b) Students must declare a concentration option prior to completing their 28th hour of course work; c) Students, in consultation with their advisors, will select an advisory committee (three faculty members including the advisor) which will develop an area of concentration consisting of 15 credits. Six of these credits may be taken prior to committee approval of the concentration area. Students may take up to nine of the 15 hours outside

the department, provided the advisory committee approves. Students will receive certification of the concentration area by having it listed on their transcripts; d) Students will submit to their advisory committee a "concentration area paper" which must demonstrate competence in the subject matter by reviewing literature and discussing prominent issues. Students must enroll for one credit of independent study while working on the concentration area paper. (A maximum of one credit of independent study for the purpose of writing the paper may be applied to the degree.)

Written comprehensive examinations for both options in theory and research methods/statistics must be taken after students complete their first 18 credits of graduate study, including SOC 501, 502, 601, 602, and 608. Students admitted provisionally must achieve regular student status prior to taking the comprehensive examinations.

Up to six graduate credits from other schools or other departments may be accepted toward the M.S. degree upon approval of the graduate program coordinator. If courses not designated as approved electives are to be taken outside the department while students are enrolled in the master's program in sociology, prior transfer approval must be granted by the graduate program coordinator.

For all candidates, an overall grade point average of at least 3.0 ("B") must be maintained. A student who does not maintain a 3.0 average may be dropped from the master's program at any time by the graduate program coordinator. Any graduate student who does not have at least a 3.0 average after completing 15 hours of graduate work will be dropped from the program. A graduate student must have earned an overall grade point average of 3.0 to receive a degree.

PH.D. PROGRAM

The doctoral program in social policy and social work is designed to prepare persons in the development, implementation, and evaluation of programs and policies concerned

with various social problems and to prepare clinical social work educators well grounded in research, theory, and teaching methods.

A complete description of this program is found in the School of Social Work section of this bulletin.

For application forms and additional information, write to University Enrollment Services, Graduate Admissions, Virginia Commonwealth University, 821 West Franklin Street, Richmond, VA 23284.

GRADUATE COURSES IN SOCIOLOGY (SOC)

500 Advanced Principles of Sociology. Semester course; 3 lecture hours. 3 credits. A comprehensive analysis of the concepts and techniques useful for understanding society and culture as well as the social processes and structures operant within these spheres.

501 The Foundations of Sociological Theory. Semester course; 3 lecture hours. 3 credits. The foundations of theoretical explanation of the social world is addressed from an historical and philosophical perspective. The emergence of contemporary sociological theory in the nineteenth and twentieth centuries is reviewed.

502 Contemporary Sociological Theory. Semester course; 3 lecture hours. 3 credits. A critical assessment is given of such contemporary theoretical orientations as functionalism, conflict theory, exchange theory, symbolic interactionism, and phenomenology.

601 Advanced Methods of Social Research. Semester course; 3 lecture hours. 3 credits. Prerequisites: SOC 214 and 320 or equivalent. Research as a systematic process involving formulation of the problem, design of the research, field operation, the processing and analysis of data, and preparation of the research report. Also considered are critical analyses of current methods, administration of research projects, and the significance of research to social action.

602 Applications of Advanced Research Methods. Semester course; 3 lecture and conference hours. 3 credits. Prerequisites: SOC 501, 601, and 608. The methods of developing a research project will be analyzed from the initial problem identification, literature review, theoretical framework, through research design, and procedures.

603 Seminar in Population Studies. Semester course; 3 lecture hours. 3 credits. Analysis of fertility, mortality, and migration from a sociodemographic perspective. Special attention will be paid to sociological determinants of demographic processes and their interrelationships.

604 Sociology of Work in Industry. Semester course; 3 lecture hours. 3 credits. Analyses of work relations and the social structures and mechanisms which govern and arise out of them and examination of the social problems that are inherent in the characteristics that make a society an industrial society.

607 Seminar in Racial and Ethnic Relations in America. Semester course; 3 lecture hours. 3 credits. A study of intergroup relations in such areas as busing and school desegregation, racism, minority separatist movements, ethnic-racial violence, minorities and athletics, the emergence of white ethnic groups in the political systems, and the position of minorities in legal, economic, and medical institutions.

608 Advanced Statistical Methods. Semester course; 3 lecture hours. 3 credits. Prerequisites: SOC 214 and 320 or equivalent. A discussion of statistical methods related to sociological research. The statistical techniques include correlation and regression, multiple correlation, and multiple regression, T test, one- and two-way analysis of variance, nonparametric statistical techniques—especially PRE measures.

609 Seminar in the Family. Semester course; 3 lecture hours. 3 credits. Analysis of contemporary family life with an emphasis on the influence of social change. Consideration of current family crises and problems.

610 Complex Organizations. Semester course; 3 lecture hours. 3 credits. A study of complex organizations in society with emphasis on the determinants and effects of organizational structure and process.

611 Studies in the Community. Semester course; 3 lecture hours. 3 credits. The organization of the community with emphasis on major trends in urban development and growth. The interdependence of political, social, and economic geographic units. The need for cooperative planning and control.

612 Seminar in the Sociology of Deviant Behavior. Semester course; 3 lecture hours. 3 credits. The nature and functions of deviance. Theories and problems of social control.

613 Social Stratification. Semester course; 3 lecture hours. 3 credits. An in-depth analysis of status differentials in society (e.g. social class, prestige, and power.).

614 Seminar in the Sociology of Education. Semester course; 3 lecture hours. 3 credits. A sociological analysis of education as a social institution with an emphasis on methodological issues and policy implications.

615 Seminar in Mass Communications. Semester course; 3 lecture hours. 3 credits. A sociological analysis of contemporary media and their interrelationships with social systems, media, and national development. Special emphasis on media as instruments of social and cultural change. (Some theoretical background in sociology is recommended.)

620 Seminar in Criminology. Semester course; 3 lecture hours. 3 credits. Discussion and investigation of contemporary issues in criminology. Special emphasis on research problems in and theories of crime causation.

622 Theory Construction. Semester course; 3 lecture hours. 3 credits. A consideration of recent social theorists in which emphasis is placed on the logic of theory construction.

623 Causal Analysis. Semester course; 3 lecture hours. 3 credits. Prerequisites: SOC 602 and 608 or equivalent. An examination of the utility of causal reasoning in the social sciences, and an introduction to causal modeling.

Topics studied include the development of theoretical linkages, recursive and nonrecursive path estimation, causal thinking and theoretical refinement, and policy analysis and system dynamics.

625 Urban Sociology. Semester course; 3 lecture hours. 3 credits. Prerequisite: graduate standing. A detailed analysis and examination of the social and ecological structures and processes of the modern city with primary emphasis on the macro-level organization of urban life.

630 Social Psychology. Semester course; 3 lecture hours. 3 credits. Discussion and investigation of selected social psychological issues in sociology, as well as traditional and innovative methodology applied to these issues.

640 Seminar in Political Sociology. Semester course; 3 lecture hours. 3 credits. Analysis of structures and processes of political organization. Examination of the creation and management of power, diffusion and regulation of conflict, and the politics of modernization and bureaucratization.

645 The Sociology of Health and Illness. Semester course; 3 lecture hours. 3 credits. An examination of sociocultural factors in health and illness and the influence of social factors on recovery and rehabilitation. Special attention will be paid to the methodology found in current studies.

691 Special Topics. Semester course; 3 lecture hours. 3 credits. Seminars on current specialized areas of sociological and anthropological interest.

692 Independent Study. Semester course; 1–3 credits per semester. Prerequisites: permission of an instructor and the Graduate Program Committee. A maximum of six credits may be submitted toward the master's degree.

698 M.S. Thesis. 1–6 credits. May be repeated.

ADDITIONAL GRADUATE COURSES AVAILABLE IN THE COLLEGE OF HUMANITIES AND SCIENCES

ANT 551 Anthropology for the Museologist. Semester course; 3 lecture hours. 3 credits. A discussion and investigation of contemporary anthropological themes and questions and identification of how they can be depicted with museum materials. Students are expected to develop a research design for an exhibit.

FLA 591 Topics in Foreign Languages. Semester course; 3 lecture hours. 3 credits. A detailed study of selected topics in one or more of the foreign language or comparative courses offered by the department.

FRE 500 French for Graduate Students. Semester course; 3 lecture hours. 3 credits. This course is designed to prepare graduate students for the reading knowledge examination for higher degrees. Each graduate department will determine the nature and form of the certifying examination.

FRE 501 French Communication. Semester course; 3 lecture hours. 3 credits. An intensive study of communication in French. The content of this course will emphasize primarily oral, written, and listening skills.

FRE 511 French Civilization. Semester course; 3 lecture hours. 3 credits. Prerequisite: functional fluency in French since the class will be taught in French. A comprehensive study of the civilization and culture of France and its global expressions.

GEO 550 Physical Geography of Virginia. Semester course; 6 field hours. 3 credits. Field course, traversing the varied physical regions of Virginia with emphasis on the climate, terrain, soils, and vegetation of each region and on the transitional zones in between. Human modification of the physical environment and its consequences are also stressed.

GEO 551 Cultural Geography of Virginia. Semester course; 6 field hours. 3 credits. Field course, traversing the various cultural regions of Virginia with emphasis on the basic economic activities of each area, the cumulative effect of occupation of the regions, and past and present changes in the cultural landscape.

GEO 680 Geography Workshop. Semester course; 1 lecture or 2 field hours per credit. 1-6 credits. Lecture, laboratory, and/or field course; may be repeated with different topics to a maximum of 9 credits. An intensive study of a particular area or topic in geography. See Schedule of Classes for specific workshops to be offered each semester.

GER 500 German for Graduate Students. Semester course; 3 lecture hours. 3 credits. This course is designed to prepare graduate students for the reading knowledge examination for higher degrees. Each graduate department will determine the nature and form of the certifying examination.

GER 502 German Communication. Semester course; 3 lecture hours. 3 credits. An intensive study of communication in German. The content of this course will emphasize primarily oral, written, and listening skills.

GER 512 German Civilization. Semester course; 3 lecture hours. 3 credits. Prerequisite: functional fluency in German since the class will be taught in German. A comprehensive study of the civilization and culture of Germany and its global expressions.

HIS 580 Studies in Early American Leadership. Two-week session. 3 credits. A summer workshop combining lectures, discussion, projects, and tours to analyze the development of the ideals of a democratic society in the British/American colonies and the lives of eighteenth-century leaders. The focus of the workshop will be on Virginia; the context will be early America.

HIS 591 Special Topics in History. Semester course; 1-3 lecture hours. Variable credit 1 to 3 credits. May be repeated with different topics for a maximum of nine credits. An intensive study of a selected topic in history.

HIS 692 Independent Study. Semester course. 1-3 credits. Maximum of 6 credits. Prerequisite: permission of chairman of Department of History and director of graduate studies in department in which student is pursuing graduate work. For students in English or other graduate programs to analyze an historical problem or topic in depth under faculty supervision.

PHI 508/Religious Studies 508 Indian Tradition. Semester course; 3 lecture hours. 3 credits. A systematic

analysis of the major theories of Indian religious and philosophical thought: Vedas, Upanishads, Gita, Charvaka. Jainism, Buddhism, the six systems of Hinduism and contemporary developments.

PHI 510/Religious Studies 510 The Chinese Tradition in Philosophy. Semester course; 3 lecture hours. 3 credits. A study of the development of Confucianism, of alternative ways of thought prior to the fall of the Han Dynasty, and of neo-Confucianism. The systems of thought are examined in the light of their social, political, and religious impact on China, Korea, and Japan.

PHI 512/Religious Studies 512 Buddhism in East Asia. Semester course; 3 lecture hours. 3 credits. A survey of the development of Buddhism in China, Korea, and Japan, the formation of the various schools in each country, and their role in the molding of Far Eastern culture.

PHI 521, 522 Aesthetics. Semester courses; 3 lecture hours. 3, 3 credits. A critical survey of aesthetics from antiquity to the twentieth century. First semester: antiquity to the Renaissance; Second semester: the Renaissance to the present. Topics to be considered include the nature of art, aesthetic experience, the aesthetic object, and aesthetic judgments. Specific attention will be given to aesthetic analysis in the arts of painting, music, architecture, and the motion picture.

PHI 530 Philosophy of Religion. Semester course; 3 lecture hours. 3 credits. An introduction to the major problems and questions of religion and reason. Special reference will be made to the nature of God, the nature of man, the problem of evil, the source of good, immortality, and the basis of authority.

PHI 601 Principles of Ethics. Semester course; 3 lecture hours. 3 credits. Prerequisite: graduate standing. An examination of major ethical theories and their application to contemporary issues in medicine, science, and public policy.

PHI 602 Biomedical Ethics. Semester course; 3 lecture hours. 3 credits. An examination of ethical theory and its application to moral problems in medicine and biotechnology.

PHI 635 Philosophy of the Social Sciences. Semester course; 3 lecture hours. 3 credits. A philosophical study of the nature of science and scientific explanation, with emphasis upon the social sciences. Topics include the philosophical analysis of objectivity in the social sciences, theories of human action, and the relation of social sciences to the physical sciences.

PHI 683/Public Administration 683 Administrative Ethics. Semester course; 2, 3 hours. 2, 3 credits. No prerequisite. A philosophical investigation into the problems of making ethical decisions, focusing on issues likely to confront the public administrator. Examples of such issues are: equity in social services delivery, affirmative action, loyalty to the bureaucracy vs. "whistle blowing," and conflicts of interest between personal and public interest.

PHI 713/Doctor of Public Administration 713 Ethics and Public Policy. Semester course; 3 lecture hours. 3 credits. An examination of the role of ethics and ethical

reasoning within the American public policy system. Special emphasis is given to the personal and professional ethical structures of the public executive and how these impact upon public policy. Topics include obligation, values, constitutionalism, distributive justice, equity, equality, secrecy, and lying. (Doctoral students only)

PHY 571 Theoretical Mechanics. Semester course; 3 lecture hours. 3 credits. Prerequisites: PHY 301 and MAT 301 or permission of instructor. An introduction to advanced dynamics involving the Lagrangian and Hamiltonian formalisms.

PHY 576 Electromagnetic Theory. Semester course; 3 lecture hours. 3 credits. Prerequisites: PHY 376 and MAT 301 or permission of instructor. Maxwell's equations of electromagnetism, vector and scalar potentials, electromagnetic waves, and radiation theory.

PHY 580 Quantum Mechanics. Semester course; 3 lecture hours. 3 credits. Prerequisites: PHY 380, MAT 301, or permission of instructor. Theoretical quantum descriptions with emphasis upon mathematical techniques. Schrodinger equation, hydrogen atom, eigenfunctions and eigenvalues, angular momentum and spin, and perturbation theory.

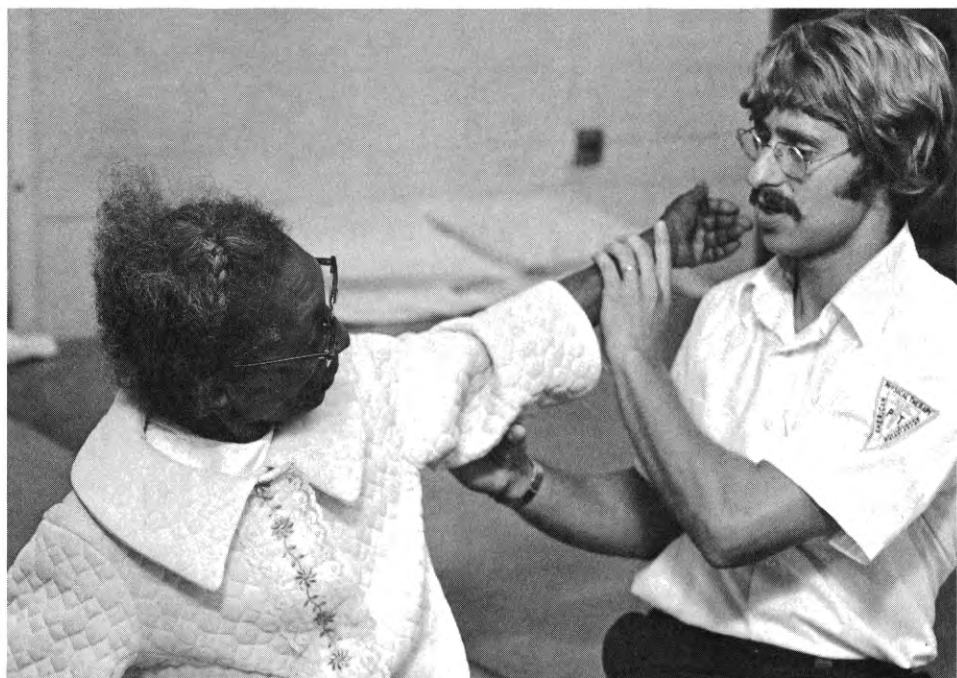
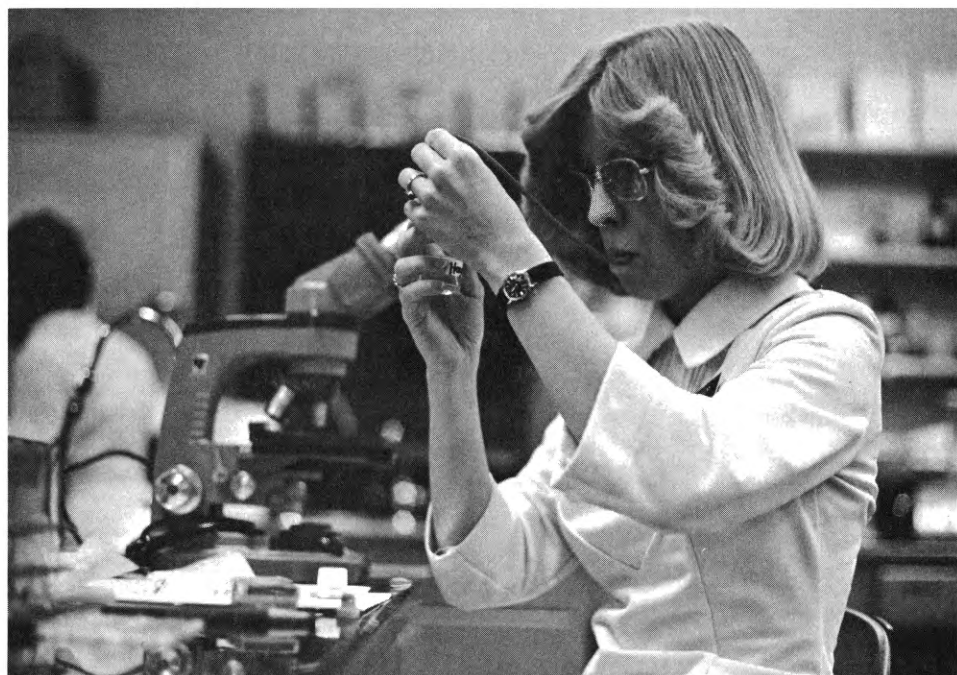
POS 553 The Military in Politics. Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of in-

structor. The course will examine the pervasive character and growing importance of the military in the governmental and policymaking processes. It will include a study of the history of civil-military relations, and of the changing dynamics of the relationship that occurs in response to changes in social and political contexts and as a result of technological changes in the military and warfare.

POS 660/Public Administration 660 Community Power Dynamics. Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of department. Examination of the location of power in the American community: operational concepts and general methodological approaches defined; empirical findings based on various methodological approaches: conclusions on community political systems and power.

SPA 503 Spanish Communication. Semester course; 3 lecture hours. 3 credits. An intensive study of communication in Spanish. The content of this course will emphasize primarily oral, written, and listening skills.

SPA 512. Spanish Civilization. Semester course; 3 lecture hours. 3 credits. Prerequisite: functional fluency in Spanish since the class will be taught in Spanish. A comprehensive study of the civilization and culture of Spain and its global expressions.



PART III—School of Allied Health Professions

ADMINISTRATIVE OFFICERS

THOMAS C. BARKER, B.S., M.A., Ph.D.
Dean

BENJAMIN T. CULLEN, Jr., B.S., M.A., Ed.D.
Associate Dean

JAMES W. HOLSINGER, B.S., M.S., M.D., Ph.D.
Associate Dean for Veterans Administration
Affairs

JENNIE D. SEATON, B.A., M.S., Ed.D.
Director, Center for Allied Health Education

The School of Allied Health Professions was established on January 1, 1969. A fundamental reason for the establishment of the School of Allied Health Professions was to provide an administrative structure for existing educational programs in allied health disciplines and to direct the development of new programs in response to growing needs for allied health manpower. At the outset, the school incorporated existing educational programs for hospital administration, medical technology, physical therapy, and radiologic technology. A program for nurse anesthesia was inaugurated as a separate department in 1969; an existing educational program in occupational therapy located on the Academic Campus was transferred administratively to the School of Allied Health Professions in 1970; also in 1970, a teaching program in patient counseling formerly based within MCV Hospitals was integrated with the school. Since 1974 baccalaureate programs in health care management, medical record administration, and radiation sciences with specific concentrations in edu-

cation and in administration have been established.

PROGRAMS

Graduate programs currently in this school and the degrees conferred on their graduates are

DEPARTMENT OF MEDICAL

TECHNOLOGY: Master of Science

DEPARTMENT OF OCCUPATIONAL

THERAPY: Master of Science in Occupational Therapy; Master of Science

DEPARTMENT OF PHYSICAL

THERAPY: Master of Science; Ph.D. in conjunction with the Department of Anatomy or Physiology, School of Basic Sciences

DEPARTMENT OF HEALTH

ADMINISTRATION: Master of Health Administration; Ph.D. in health services organization and research¹

DEPARTMENT OF NURSE

ANESTHESIA: Master of Science in Nurse Anesthesia

PHILOSOPHY

The faculty of the school is committed to offer, through the establishment and maintenance of rigorous standards of excellence,

¹An application is in the process of being filed to change the name of this degree to Ph.D. in health administrative sciences.

education that will prepare students for professional careers in the several allied health disciplines. Development of professional attitudes, emotional maturity, and ethical behavior in students are vital components of the educational process. It is essential that students gain a deep respect for the dignity of man and the inherent rights of patients and others who receive services. The programs are designed to include not only the development of skills to assure excellence in quality of health care, but also such factual knowledge and experiences that will provide the bases for continuing intellectual and professional growth.

Community services of the school and faculty include continuing education, consultative resources, and participation in all pertinent areas of health care. An integral part of these efforts is to stimulate and sponsor research activities in the allied health disciplines represented within the school and to encourage interdisciplinary research.

FACILITIES

Departments and programs in the School of Allied Health Professions are presently housed in the Egyptian Building, Randolph-Minor Annex, MCV Hospital South, Newton House, Nursing Education building, Lyons Building, Tompkins-McCaw Library, VMI building, and the Sheltering Arms building. Plans are currently underway to consolidate the various components of the School of Allied Health into one educational facility. This facility will permit expanded enrollments in most departments and programs, and will provide improved and enlarged educational and research areas.

ACCREDITATION

The School of Allied Health Professions is an institutional member of the American Society of Allied Health Professions and the Virginia Association of Allied Health Professions. All of its programs are approved or accredited by the appropriate national professional or educational organizations.

ATTENDANCE REGULATIONS

The faculty considers attendance at lectures, laboratories, and other functions a requisite to the successful acquisition of the knowledge and skills required of the profes-

sional. Hence, the faculty cannot condone absence without good reason from any regularly scheduled educational experience. At the start of each course, instructors will relate to their classes the policy of the department concerning the attendance regulations for that semester. The nature of make-up work in the event of absence will be the prerogative of the instructor.

GRADUATE PROGRAMS

Graduate degree offerings in the School of Allied Health Professions are designated as basic professional or advanced level programs. Accreditation requirements for the individual programs preclude the establishment of general school admission prerequisites, registration dates, and course and degree requirements beyond those of the School of Graduate Studies.

It is the intent that these regulations and procedures for each program ensure the selection of applicants whose motivation, ability, character, and health status qualify them to pursue graduate study successfully. Specific information may be found in the departmental presentations in this section or are available from departmental graduate coordinators.

STUDENT PERFORMANCE AND BEHAVIOR

The goals and objectives of the School of Allied Health Professions and its component departments and programs relate to the education of persons preparing for professional careers in the allied health disciplines. An integral requisite of students and practitioners is an undeviating acceptance of a professional attitude and pride that will motivate them to adhere to a code of professional ethics and to develop fully their competencies for practice.

Thus, the suitability of student performance and behavior relating to these professions and to the consumers of health care is a paramount concern of the administration and faculty of this school. To assure a quality of educational and clinical preparation for its graduates, the following statement is promulgated:

"If, in the judgment of the Faculty/Administration of the School of Allied Health Professions, a student is not

considered suitable for emotional, professional, or related reasons, the student's academic status may be appropriately altered."

If any questions arise regarding the standards of performance or behavior, it is the responsibility of students to apprise themselves of acceptable character and conduct requirements prior to matriculation in the designated department or program.

GRADUATE COURSES IN ALLIED HEALTH PROFESSIONS (AHP)

Nearly all course offerings in the schools are provided by departments and programs; however, selected graduate courses considered applicable to many students in these programs have been assigned to the School of Allied Health Professions.

573 Teaching in Health Professional Schools. Semester course; Section 01, 3 lecture hours. 3 credits. Section 02 (Dental), 3 lecture hours. 2 credits. Study of the relationships between health education and higher education in general; current essentials; standards in education for the health professions; and theoretical approaches to the implementation of these standards in both academic and clinical learning. Emphasis will be placed on modes of adapting to future needs of the professions.

582 Supervision in the Allied Health Profession. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Study of the supervisory process and staff development, training in communication and interpersonal skills, and public relations within the health facility.

591 Special Topics. Semester course; 1-4 credits. Prerequisite: permission of instructor. Interdisciplinary study through lectures, tutorial study, or independent research of selected topics not provided in other courses.

594 Health Education Practicum. Semester course; 1 lecture and 4 laboratory hours. 1-6 credits. Section 01, General. Section 02, Nurse Anesthesia. Section 03, Medical Technology. Preparation, presentation, and evaluation of selected educational experiences in the appropriate undergraduate program.

596 Supervisory and Administrative Practicum in Allied Health Clinics. Semester course; 60 clinical hours per credit. 1-9 credits. Section 01 MT, Section 02 PT. Prerequisite: permission of instructor. The course is designed for the student who will be assuming supervisory and administrative roles. Areas to be covered include clinical personnel management, budgeting and ordering of materials and equipment, consultation with physicians, developing and troubleshooting clinical methods, designing job descriptions, and implementation of quality control programs.

Courses offered by the School of Educa-

tion on the Academic Campus are generally oriented to graduate students interested in teaching, administration, or supervision.

Department of Medical Technology

FACULTY

Fike, Dorothy J. *Assistant Professor* M.S., Cleveland University; immunology, immunohematology.

Izard, Jessie V. *Professor and Chairman* M.Ed., Virginia Commonwealth University; education, immunohematology.

Karselis, Terence C. *Associate Professor* M.S., State University of New York at Buffalo; instrumentation.

Lindsey, Barbara J. *Associate Professor* M.S., Medical College of Virginia of Virginia Commonwealth University; chemistry.

Odom, Donna *Associate Professor* M.A., Central Michigan University; education, microscopy, parasitology.

Sauer, Debbie *Assistant Professor* M.S., Medical College of Virginia of Virginia Commonwealth University; clinical management, chemistry.

Sauer, Ronald L. *Assistant Professor* M.A., University of California; microbiology.

Sommer, Sandra R. *Assistant Professor* M.S., Medical College of Virginia of Virginia Commonwealth University; hematology.

GRADUATE PROGRAM

The Department of Medical Technology offers a program leading to a Master of Science degree in medical technology. It is designed to provide advanced theoretical and practical education to the individual whose aim is to become an educator, supervisor (administrator), or researcher in the field of medical technology. Students may specialize in one of the following clinical disciplines: hematology, microbiology, chemistry, or instrumentation. The core curriculum comprises courses in education, administration, and clinical instrumentation. This is in addition to the numerous basic science courses offered within the department or in other departments of the university.

ADMISSION REQUIREMENTS

In addition to the general requirements for admission to the university, applicants must

1. hold current certification as a medical technologist or specialist;
2. have a minimum of two years' experience in clinical laboratory science.

It is recommended that at least one of these two years be in the area in which students plan to specialize (in extraordinary circumstances and upon approval of a majority of the faculty, this requirement may be waived); and

3. and take the Graduate Record Examination (GRE). Any medical technologists who desire to advance their theoretical and practical knowledge may be admitted upon the recommendation of the faculty as special or conditional students, and may enroll in any of the graduate courses offered within the university. Special or conditional students, however, cannot be considered for candidacy for the Master of Science degree until the full admission requirements are satisfied.

Application materials may be obtained from University Enrollment Services, Graduate Admissions, Virginia Commonwealth University, 821 West Franklin Street, Richmond, VA 23284.

ACADEMIC REQUIREMENTS

It has been found that 21 to 25 months on a full-time basis are necessary to complete the requirements. There are no full-time residence requirements. However, part-time students must complete all work requirements within five years. An interruption in registration in excess of one semester requires prior approval of the department.

The minimum credit requirement is 34 semester hours: 18 in basic science (3 in instrumentation), 6 in research, 3 in education, and 3 in supervision/management. Actual credit hours accumulated will vary depending upon the area of specialization. Included is required participation in MET 690 Seminar for a minimum of 4 semesters. Experience has shown that the average candidate accumulates more hours than this. All courses selected must be approved by the student's advisor.

A research study conducted under the guidance of an advisor and culminating in a thesis is required of all candidates. The thesis must be presented in both written and oral form to a thesis committee composed of the student's advisor and two other members. The thesis committee will include at least one

member from a department other than medical technology.

PROGRAM OPTIONS

The department offers instruction in education, supervision and administration, biomedical research, and instrumentation. Students are expected to gain experience in at least one of these areas by way of specific theoretical and laboratory (practicum) courses.

The basic science requirement may be distributed among approved courses listed in the graduate bulletin. It is strongly recommended that students obtain at least one course in computer science and/or biostatistics.

COURSES OF INSTRUCTION (MET)

501 Instrumental Methods of Analysis I. Semester course; 2 lecture and 4 laboratory hours. 2-4 credits. Prerequisite: permission of instructor. A study of modern research and clinical laboratory instrumentation and procedures. Principles, theory, and comparison of laboratory instruments will be discussed in detail along with the factors affecting their operation. Two credit hours will be given students upon successful completion of the lecture portion of the course. Laboratory exercises have been designed to demonstrate the practical applications of the instruments studied in the research and clinical laboratory. Two additional credit hours will be given to students who elect and satisfactorily complete this option. Areas to be covered include: spectrophotometry, fluorometry, flame emission photometry, and atomic absorption spectrophotometry. Offered alternate years beginning 1981.

502 Instrumental Methods of Analysis II. Semester course; 2 lecture and 4 laboratory hours. 2-4 credits. Prerequisite: permission of instructor. A study of modern research and clinical laboratory instrumentation and procedures. Principles, theory, and comparison of laboratory instruments will be discussed in detail along with the factors affecting their operation. Two credit hours will be given students upon successful completion of the lecture portion of the course. Laboratory exercises have been designed to demonstrate the practical applications of the instruments studied in the research and clinical laboratory. Two additional credit hours will be given to students who elect and satisfactorily complete this option. Areas to be covered include: electrophoresis, chromatography, particle counters, radioisotope counters, and clinical laboratory automation. Offered alternate years beginning 1981.

580 Supervision and Administration in Medical Technology. Semester course; 3 lecture hours. 3 credits. This course is designed for students who will be assuming leadership roles in medical technology. Special emphasis will be placed on the role of the medical technologist in education. Topics to be covered include curriculum design, laboratory design, including

teaching areas, budgeting interviewing, ordering equipment and supplies, and requirements for accreditation of approved programs for MT, MLT, and CLA.

605 Advanced Hematology. Semester course; 4 lecture hours. 4 credits. To enable the student to understand the basis for special procedures used in hematology and their application in differentiating blood dyscrasias.

610 Interpretative Clinical Hematology. Semester course; 2 lecture hours. 2 credits. Prerequisite: permission of instructor. The aim of this course is to present the principles of hematopoiesis and to study related pathological and pathophysiological correlation of hematological disorders.

690 Medical Technology Seminar. Semester course; 1 lecture hour. 1 credit. Presentation and discussion of current research and topics of interest by the departmental faculty, graduate students, and visiting lecturers.

750 Special Topics in Medical Technology. Semester course; 1-4 credits. This course provides for lectures, tutorial studies, and/or library assignments in specialized areas not available in formal courses or research training.

790 Research in Medical Technology. Semester course; 1-15 credits. Research leading to the M.S. degree.

See other sections of this bulletin for descriptions of the following courses:

Biostatistics 521

Allied Health Professions 573, 574, 581, 582, 583

Health Administration 647

Pathology 509, 510, 513, 521, 522, 602, 606, 610, 614

Anatomy 514

Biochemistry 501, 503, 505

Microbiology and Immunology 504, 507

Human Genetics 504, 516

Physiology and Biophysics 501, 502

Department of Occupational Therapy

FACULTY

Barris, Roann *Assistant Professor* Ed.D., Columbia University; instructional technology, environment and occupational therapy role.

Chichester, Florence B. *Associate Professor* M.A., University of Southern California; professional education.

Hopkins, Bette L. *Assistant Professor* M.A., University of New Hampshire; physical disabilities occupational therapy.

Kielhofner, Gary W. *Assistant Professor* Dr. P.H., University of California at Los Angeles; rehabilitation processes, theory development in occupational therapy.

Maurer, Patti A. *Professor and Chairman* Ph.D., Purdue University; instrument development, instructional methods.

Nelson, Craig E. *Assistant Professor* M.S., Syracuse University; physical disabilities occupational therapy, adaptive equipment and environments for the disabled.

Neville, Ann M. *Assistant Professor* M.S., Columbia University; models of occupational therapy.

Saxton, Dorothy P. *Associate Professor* M.A., Western Michigan University; clinical education.

Watts, Janet H. *Assistant Professor* M.A., Virginia Commonwealth University; psychiatric occupational therapy.

Wolfe, Eleanor *Associate Professor* M.A., Texas Women's University; pediatric occupational therapy.

"Since the primary focus of occupational therapy is the development of adaptive skills and performance capacity, its concern is with factors which serve as barriers or impediments to the individual's ability to function, as well as those factors which promote, influence, or enhance performance.

"Occupational therapy provides service to those individuals whose abilities to cope with tasks of living are threatened or impaired by development deficits: the aging process, poverty and cultural differences, physical injury or illness, or psychologic and social disability." (From *Definition and Functions*, American Occupational Therapy Association.)

HISTORY

The program in occupational therapy was initiated at Richmond Professional Institute in 1942.

In 1965 the graduate program leading to a Master of Science degree in basic professional education in occupational therapy was initiated. The School of Occupational Therapy became a department in the School of Allied Health Professions in 1970 with the creation of Virginia Commonwealth University.

PHILOSOPHY

The faculty of the Department of Occupational Therapy is concerned with improving the quality of occupational therapy professional services through education relevant to current consumer needs and through the development of student attitudes of commitment to personal and professional competence. Research, community service, and continuing education are viewed as ways to improve professional services and at the same time enhance the quality of the educational program.

The department seeks to provide individualization of educational experiences

through a professional curriculum. This curriculum emphasizes experiential learning and provides an integrated education organized around a human developmental frame of reference.

OBJECTIVES

To provide students with the opportunity to become competent registered occupational therapists through critical thinking and problem-solving experiences.

To provide an environment for students to develop respect for the dignity and basic needs of individuals throughout their life span as these may be met in present and future health care delivery systems.

To provide students with the opportunity to develop skills necessary to evaluate and execute effective treatment in occupational therapy.

FACILITIES

The educational facilities of the Department of Occupational Therapy are located in the Virginia Mechanics Institute Building at the northeast corner of Tenth and Marshall Streets. In addition, the department has an educational clinic at McGuire Veterans Administration Medical Center.

During the basic professional graduate program, field work assignments are made for students in a wide range of clinics and agencies in the Richmond metropolitan area. A 24-week extended field work requirement will be arranged in approved clinical education facilities throughout the United States.

ACCREDITATION

The basic professional graduate program to become an occupational therapist is accredited by the American Occupational Therapy Association and the Committee on Allied Health Education and Accreditation of the American Medical Association.

HONORS AND AWARDS

C. A. Kooiman Memorial Award. This award is given in memory of C. A. Kooiman, director of the occupational therapy curricula from 1961 until his death in 1976. The award is made annually to the graduate student completing the best research project.

PROGRAMS

Three courses of study are offered

1. A Master of Science in occupational therapy, a basic professional degree program, designed for college graduates who wish to become occupational therapists. This program may be completed in two calendar years or may be individually designed for students who need a slower pace. The basic professional master's program includes academic courses, a thesis or research project, and 960 clock hours of field work experience. Twelve weeks of the field work clock hours must be continuous.
2. A Master of Science degree program for those who are registered occupational therapists. This program is individually designed in special areas of concentration. A minimum of 33 semester hours including a thesis is required.
3. A special concentration track degree program for occupational therapists with interest and experience in hand management.

ACADEMIC REGULATIONS

Students are admitted to the occupational therapy programs with the expectation that they will direct maximum time and effort to the learning process. Outside activities must be scheduled by students for such dates and hours that permit full compliance with the time requirements for course work. Students must not expect that allowances will be made, except in very unusual situations, for tardiness, lack of regular attendance, and meeting deadlines for course assignments because of employment or other outside activities.

To continue in the graduate curriculum students are expected to maintain a cumulative GPA of 3.0.

1. Students who fail to maintain a cumulative grade point average of 3.0 in all courses or who receive a grade of "D" at the end of the first fall semester of enrollment and for every semester thereafter, will automatically be placed on one semester of probation. Conditions of probation require students to earn a quality point

- average the semester of probation sufficient to result in a cumulative GPA of 3.0 and may include recommendations for academic counseling, assignments by individual instructors, and other appropriate conditions as outlined in a letter of notification of probationary status prepared by the Committee on Academic Standing and Student Progress.
2. Students who earn an "F" or two "D" grades will not be allowed to continue in the program.
 3. Students who receive two "C" grades (except in Field Work II) and yet who may not have a deficient GPA will receive a letter of concern of unsatisfactory performance with recommendations for remediation.
 4. Students who withdraw from Field Work II before the mid-point of the field work will receive a "W." Students who withdraw from Field Work II after the mid-point of the experience and prior to three weeks from completion will normally received an "F." Students receiving an "F" will be reviewed by the Committee on Academic Standing which may result in termination or continuation on probationary status with continuation contingent upon remediation.
 5. Students who have not fully met the requirements for admission may be admitted into the graduate program on conditional status. Advancement to full status may be approved by the Committee on Academic Standing and Student Progress when students have satisfactorily completed one semester of graduate studies. Students admitted on conditional status may be dismissed from the graduate program at the end of their first semester of graduate studies if they have not earned a 3.0 GPA. Conditional status is a probationary status; the requirements for advancement to regular status are specified in the conditional admission letter prepared by the Graduate Admissions Committee.
 6. Regardless of academic standing, to continue in the program, students are also expected to
 - a. pay all fees;
 - b. maintain personal attributes and behavior appropriate for professional practice;
 - c. complete field work requirements to the satisfaction of clinical and academic faculty.
 7. Although arrangements are made in advance, each student is reviewed prior to placement in Field Work II education. Students must have satisfactorily completed courses prerequisite to that field work experience. They must also demonstrate the maturity, stability, professional attitude, and behavior essential for them to benefit and perform adequately in the placement.

GRADUATE PROGRAM—BASIC PROFESSIONAL PROGRAM

The Department of Occupational Therapy offers a program leading to a Master of Science in occupational therapy degree for qualified students who have earned a bachelor's degree in a related field.

Admission Requirements²

Applicants for the basic professional master's degree program must complete the following prerequisites with a grade of "C" or better:

English	6 semester hours
Biological Sciences	6 semester hours
Must include	
Human Anatomy with laboratory — 1 course and	
Human Physiology with laboratory — 1 course	
or	
Human Anatomy and Physiology	
with laboratory	
6 semester hours	
Social Sciences	15 semester hours
Must include	
Psychology	
6 semester hours	
Sociology, Social Psychology,	
Anthropology	
3 semester hours	
Statistics	2 semester hours

These are considered minimal prerequisites, and applicants are encouraged to pursue additional study in biology, psychology, and sociology. To fulfill the psychology prerequisite, courses in Developmental Psychology, Theories of Personality, and Abnormal Psychology are

²See also the section on graduate programs in the School of Allied Health Professions.

highly recommended. Experience in occupational therapy or human service agencies is required. Admission is selective, since the number of applicants exceeds the number of students who can be enrolled.

For further information and application materials, contact University Enrollment Services, Graduate Admissions, Virginia Commonwealth University, 821 Franklin Street, Richmond, VA 23284.

Curriculum Plan

The total program is planned for completion in two calendar years of full-time study and encompasses academic and field work education as well as a research project. Each academic session has as a prerequisite successful completion of all preceding academic work.

First Year, Summer

		Credits
BIO 525	Advanced Functional Anatomy. . .	5
BIO 529	Advanced Functional Neuroanatomy	3
		8

First Year, Fall Semester

OCT 501	Basic Treatment Concepts and Skills	2
OCT 503	Occupational Life Roles and Tasks	2
OCT 505	Physical Dysfunction and Occupational Therapy Intervention I	5
OCT 507	Psychosocial Dysfunction and Occupational Therapy Intervention I	5
OCT 509	Activity Theory and Skills I	2
		16

First Year, Spring Semester

OCT 504	Occupational Life Roles and Tasks II.	1
OCT 506	Physical Dysfunction and Occupational Therapy Intervention II	5
OCT 508	Psychosocial Dysfunction and Occupational Therapy Intervention II	5
OCT 510	Activity Theory and Skills II	2
OCT 602	Research Methods in Occupational Therapy	3
		16

Second Year, Summer

OCT 693	Field Work Education I.	9
---------	---------------------------------	---

Second Year, Fall Semester

OCT 603	Administration and Supervision of Occupational Therapy Services . .	3
---------	---	---

OCT 605	Influences on Health and Health Care	2
HAD 500	Hospital and Medical Care Organization (or an additional section of OCT 691, 3 credits)	3
OCT 691	Special Topics in Occupational Therapy	3
OCT 698	Research in Occupational Therapy	3
		14

Second Year, Spring Semester

OCT 694	Field Work Education II	9
OCT 699	Research in Occupational Therapy	3
		12

GRADUATE PROGRAM FOR OCCUPATIONAL THERAPISTS

The Department of Occupational Therapy offers a Master of Science degree program for registered occupational therapists with the following areas of concentration: administration, education, gerontology, pediatrics, physical disabilities, and psychosocial dysfunction.

Admission Requirements

Applicants must have earned a bachelor's degree from an accredited college or university and have graduated from an accredited occupational therapy program approved by the American Occupational Therapy Association. An official report of scores on the Aptitude Test of the Graduate Record Examination is required.

For information and application materials, contact University Enrollment Services, Graduate Admissions, Virginia Commonwealth University, 821 West Franklin Street, Richmond, VA 23284.

Curriculum

The Master of Science degree program includes a minimum of 27 credits of approved course work and six credits for the thesis. Students may plan for full-time study or may plan to enroll on a part-time basis. Full-time students must plan at least 12 months to complete all degree requirements.

Each occupational therapist accepted for the master's degree program will develop an individualized plan of study with the help of a faculty advisor. This study plan must be approved by the Committee on Academic Standing and Student Progress of the Department of Occupational Therapy.

PROGRAM OF STUDY**Required Core Courses**

	<i>Credits</i>
OCT 501 Basic Treatment Concepts and Skills or	
OCT 601 Advanced Theoretical Concepts in Occupational Therapy.	3
OCT 602 Research Methods in Occupational Therapy	3

Required Administration Course: Select One

OCT 603 Administration and Supervision of Occupational Therapy Services .	3
OCT 605 Influences on Health and Health Care	3

Area of Concentration

Graduate courses from the Department of Occupational Therapy or from other departments at Virginia Commonwealth University

Elective Courses**Required Research**

OCT 798 Thesis	3
OCT 799 Thesis	3

Notes: A minimum of 3 credits in the area of concentration or elective courses must come from within the Department of Occupational Therapy.

Students must complete one statistics course. Courses taken at the undergraduate level meet this requirement but may not be counted toward the graduate degree.

GRADUATE PROGRAM FOR OCCUPATIONAL THERAPISTS: HAND MANAGEMENT

The Department of Occupational Therapy offers a Master of Science degree program planned for experienced occupational therapists with special interest in functional assessment of hand problems, diagnosis of hand problems, and therapeutic programs for upper extremity problems.

The hand management program in occupational therapy is offered under the guidance of Wyndell H. Merritt, M. D. and the Department of Occupational Therapy and in collaboration with the Department of Physical Therapy. Two occupational therapists will be selected to participate each year.

Admission Requirements

Applicants must have earned a bachelor's degree from an accredited college or university and have graduated from an accredited occupational therapy program approved by the American Medical Association and the American Occupational Therapy Association. Professional experience and special interest in hand rehabilitation are required.

Curriculum

The advanced master's degree program in

hand management requires 45 semester credits which include 12 credits for completion of a thesis. A minimum of 18 months of full-time study is needed to complete the program.

GRADUATE COURSES IN OCCUPATIONAL THERAPY (OCT)

501 Basic Treatment Concepts and Skills. Semester course; 1 lecture and 2-4 laboratory hours. 2-3 credits. Introduces important occupational therapy concepts: the influence of activity on health, the basic occupational therapy process, evaluation, motivation, and learning.

503 Occupational Life Roles and Tasks I. Semester course; 1 lecture and 3 laboratory hours. 2 credits. A study of growth and developmental processes and influences from infancy through adolescence, with primary focus on life roles and occupational performance skills related to self-help tasks, play/leisure tasks, and school/work tasks.

504 Occupational Life Roles and Tasks II. Semester course; 2 laboratory hours. 1 credit. This course will examine the development of occupational behavior in the adult portion of the life span. It draws upon concepts of time, role, habits, interest, and values to examine how the normal adult proceeds through occupational choice, worker roles, and retirement. The course also examines the balance of work and play and its change in normal development. Finally the course will examine the effects and interrelationships of disability with normal occupational development in adulthood.

505 Physical Dysfunction and Occupational Therapy Intervention I. Semester course; 3 lecture and 6 laboratory hours. 5 credits. The focus of this course will be to identify and describe physical dysfunction seen in the continuum of health care in medical, educational, and community settings. A wide variety of evaluative and therapeutic approaches will be explored for the age range of infancy through adolescence. Assigned level one field work will be part of the course.

506 Physical Dysfunction and Occupational Therapy Intervention II. Semester course; 3 lecture and 6 laboratory hours. 5 credits. Beginning with the early adult years and continuing through the rest of the life span, the emphasis of this course will be twofold: (1) To identify and describe physically disabling conditions (acute and chronic) which interrupt occupational development and function during this age range; (2) To apply the theories and principles of occupational therapy to the evaluation and treatment of physically disabled persons (acute and chronic) during this age range. Assigned level-one field work will be a part of this course.

507 Psychosocial Dysfunction and Occupational Therapy Intervention I. Semester course; 3 lecture and 6 laboratory hours. 5 credits. This course will focus on psychosocial pathologies which occur within the infancy through adolescence age span (including specific learn-

ing disabilities, mental retardation, and other diagnostic classifications). Theories and principles of occupational therapy intervention, useful in medical, educational, and community settings will be explored. Assigned level-one field work will be part of the course.

508 Psychosocial Dysfunction and Occupational Therapy Intervention II. Semester course; 3 lecture and 6 laboratory hours. 5 credits. This course will introduce common psychiatric disorders of young, middle, and older adults followed by review of theoretical frames of reference and related occupational therapy evaluation and intervention methods. Assigned level-one field work will be included.

509-510 Activity Theory and Skills I and II. Semester course; 1 lecture and 2 laboratory hours. 2 credits. Analysis of student's activity skills in areas of play/leisure, self-care, homemaking, and work and development of skill in performing selected activities, including splint-making. Emphasizes teaching, analysis, and therapeutic application of activities. Also stressed are evaluation and development of client's work, homemaking, and daily living skills.

601 Advanced Theoretical Concepts in Occupational Therapy. Semester course; 3 lecture hours. 3 credits. Prerequisite: OCT 312 or 501 or student must be registered occupational therapist. This course offers an advanced conceptualization of a generic theory base for occupational therapy. The course includes examination of the nature and organization of scientific knowledge, the medical model and other models of health care, sociological features of occupational therapy practice, and the study of human occupation and its disruption in illness.

602 Research Methods in Occupational Therapy. Semester course; 3 lecture hours. 3 credits. II. Covers the steps in the research process: problem definition, literature review, research design and data collection appropriate to occupational therapy, data analysis and interpretation, and research reporting. Emphasizes action research, evaluation research, and the preparation of a proposal for a thesis or project. Students with prior course work or experience in research may be permitted to take an elective instead of this course.

603 Administration and Supervision of Occupational Therapy Services. Semester course; 2 lecture and 2 laboratory hours. 3 credits. The management of human and non-human resources in the provision of efficient and effective occupational therapy services; the nature of formal and informal organizations, the administrative process, and administrative tasks. Includes supervision, consultation, and the planning of occupational therapy field work education.

605 Influences on Health and Health Care. Semester course; 2-3 lecture hours. 2-3 credits. The nature of health, illness, and disability; the sick role; relationship between occupational therapy and the health care system; current professional issues in occupational therapy.

611 The Habilitation Team in Public Schools. Semester course; 3 lecture hours. 3 credits. Examination of P.L. 94-142, The Education for All Handicapped Children Act of 1975, with implications for allied health profes-

sionals. Emphasis on the role of the habilitation team in school programs for handicapped children.

612 Occupational Therapy Assessment of Children. Semester course; 3 lecture hours. 3 credits. Introduction to the theory of testing. Administration, scoring, interpretation, and reporting of selected tests and informal assessments useful in an occupational therapy evaluation of children. Field work experiences will be required.

613 Occupational Therapy: From Research to Practice in Cognitive Development. Semester course; 3 lecture hours. 3 credits. Review of current theory and research in cognitive development. Application of child development research to handicapped children. Emphasis on the practical implications for pediatric occupational therapy.

614 Occupational Therapy for Severely Handicapped Children. Semester course; 3 lecture hours. 3 credits. Prerequisite: OCT 612. Selected intervention strategies for pediatric occupational therapy. Emphasis on theory and the application of research to the treatment of severely handicapped children.

691 Special Topics in Occupational Therapy. Semester course; 3 credits. Designed around the interests of students, faculty expertise, and availability and expertise of Richmond area occupational therapists or visiting lecturers. Format may include intensive mini-courses or workshops, an advanced course, or independent study with some opportunity for election and development of knowledge and skills in a specialized area of occupational therapy.

693 Field Work Education I. 3-9 credits.

664 Field Work Education II. 3-9 credits. Twelve-week full-time experience in programs providing occupational therapy services.

Supervised field work experiences are arranged in various settings for the application of academically acquired knowledge. Placements include experiences in prevention, health maintenance, remediation, daily life tasks, and vocational adjustment. Field work settings may include hospitals, rehabilitation centers, school systems, community agencies, camping programs, penal systems, and the like. Field work experiences are arranged individually, but placement in a specified location cannot be guaranteed.

In the event of failure, the course may be repeated only upon recommendation by the academic and clinical faculty. Field work must be completed no later than 24 months following completion of the academic phase.

698 Research in Occupational Therapy. 3 credits. Completion of a department proposal for a research project or master's degree thesis relevant to occupational therapy.

699 Research in Occupational Therapy. 3 credits. Completion of a research project or master's degree thesis relevant to occupational therapy.

798 Thesis. 3 credits. Completion of a departmental proposal for a master's degree thesis relevant to occupational therapy.

799 Thesis. 3 credits. Completion of a master's degree thesis relevant to occupational therapy.

Department of Physical Therapy

FACULTY

Gudas, Stephen A. *Assistant Professor* M.S., Medical College of Virginia of Virginia Commonwealth University; rehabilitation.

Hill, Jane R. *Assistant Professor* Ph.D., Union Graduate School; physical therapy administration.

Hirt, Susanne *Professor* M.Ed., University of Virginia; therapeutic exercise.

Lamb, Robert L. *Associate Professor* Ph.D., University of Maryland; biomechanics and kinesiology.

Mangine, Robert E. *Assistant Professor* M.Ed., University of Cincinnati; orthopaedics/sports medicine.

Newton, Roberta A. *Associate Professor* Ph.D., Medical College of Virginia of Virginia Commonwealth University; neurophysiologic physical therapy.

Payton, Otto D. *Professor and Chairman* Ph.D., University of Maryland; physical therapy education.

Personius, Walter J. *Assistant Professor* M.S., University of Iowa; orthopaedics/physical therapy.

VanSant, Anna F. *Assistant Professor* M.S., Medical College of Virginia of Virginia Commonwealth University; therapeutic exercise.

HISTORY

The current graduate program in physical therapy, which was initiated in 1968 with one student, began to expand in 1971 with the appointment of a full-time director. Enrollment currently varies from 6 to 12 students in each class.

PHILOSOPHY AND OBJECTIVES

In a world where knowledge is doubling every few years, continuing education has become a way of life for most professional people. Many of yesterday's truths have been disproven and tomorrow's truths are being generated in today's laboratories and clinics. Physical therapy, an integral part of the health care system, is involved both broadly and deeply in this atmosphere of change and growth. Expanding knowledge and skills in the basic and clinical sciences and changes in the needs and mandates of society have placed new demands and created new responsibilities for physical therapists.

These changes have not only altered the existing basic professional preparation programs but have also stimulated the develop-

ment of a variety of new and innovative postgraduate and continuing education programs. The master's degree program is designed to meet the needs of many practicing physical therapists who want to increase their skills and competencies in specialized aspects of their profession. The guiding principle of this program is flexibility which provides for adaptation to the specific interests and goals of the individual student. Students may elect courses from most of the graduate departments of both the MCV Campus and the Academic Campus of VCU (e.g. anatomy, physiology, health administration, psychology, education, etc.) in addition to courses from the graduate program of the Department of Physical Therapy in order to build a meaningful, integrated, individualized program of studies.

Prospective students are encouraged to have their goals clearly defined before they start a graduate program. Typical goals might include specialization as a clinician, educator, researcher, consultant, or administrator with expertise in a basic science or in a clinical specialty.

Areas of specialization have been developed in therapeutic kinesiology, teaching therapeutic exercise, general kinesiology and biomechanics, pediatrics, orthopaedic rehabilitation, academic and clinical education, and organization and delivery of physical therapy services. The faculty have developed recommended sequences of courses for each of these tracks.

A new interdisciplinary curricular track in geriatric physical therapy was established in 1980. The program is described in the back of this bulletin with the other interdisciplinary programs. See index.

Another interdisciplinary program in hand rehabilitation is co-sponsored by the Departments of Plastic Surgery, Physical Therapy, and Occupational Therapy, under the guidance of Wyndell H. Merritt, M.D. The program is planned for experienced physical and occupational therapists with special interest in functional assessment and therapeutic programs for hand and upper extremity problems. A maximum of two physical therapists will be admitted to this curriculum each fall. The advanced Master's Degree program concentrating on hand

rehabilitation requires 45 semester hours of course work and a thesis. A minimum of 18 months of full-time study is needed to complete the program.

STUDIES LEADING TO A DOCTOR OF PHILOSOPHY DEGREE

The Schools of Basic Sciences and Allied Health Professions offer Ph.D. programs in neurophysiological physical therapy and in anatomy-orthopaedic physical therapy. These research degrees are planned primarily as physical therapy faculty development programs; other needs may be met for individual students. Interested physical therapists should contact the Department of Physical Therapy for details.

FUTURE PLANS, FACILITIES

In addition to the usual classroom facilities, the department is developing a kinesiological research laboratory with equipment for both bioelectrical and photographic studies. Graduate students interested in education do their teaching practicum in the undergraduate classes and laboratories and in the clinical departments of MCV Hospitals. A clinical specialty practicum may be individually arranged in appropriate facilities in or out of Richmond.

Present courses and facilities will be expanded as enrollment and student interests indicate a need.

ADMISSION REQUIREMENTS

1. All general requirements for admission are specified in Part I of this bulletin.
2. Graduation from a physical therapy program approved by the American Physical Therapy Association (or, for foreign students, its equivalent as determined by the Physical Therapy Graduate Program Admissions Committee). For further information and application materials, contact University Enrollment Services, Graduate Admissions, Virginia Commonwealth University, 821 West Franklin, Richmond, VA 23284.

THE STUDENT'S ADVISOR AND GRADUATE COMMITTEE

1. Each student shall have an advisor and a graduate committee.

2. Appointment and duties of the advisor:

- a) An initial advisor will be the director of the graduate program of the student's department, or the director's designee.
- b) A permanent advisor shall be appointed by the dean upon recommendation of the chairman of the student's major department. Appointment should be made no later than the second semester after acceptance. A change in advisor may be made by the dean upon recommendation of the chairman of the department.
- c) The advisor shall be chairman of the student's graduate committee.
- d) The advisor shall, with the student's graduate committee, have responsibility for the total guidance of the student, subject to the approval of the chairman of the department and dean of the School of Allied Health Professions.
- e) The advisor shall work out a plan of study with the student.
- f) The advisor shall supervise the student's research work and thesis preparation and be one of the examiners of the thesis.

3. Appointment and duties of the student's graduate committee:

- a) The student's graduate committee shall be appointed by the dean upon recommendation of the student's advisor. The composition of the graduate committee shall be such that all significant areas of the student's course work are represented. For the purpose of examinations and thesis evaluation, and because of special knowledge and distinction in the field of the candidate's work, an additional member, who may be from a different institution, may be appointed to the student's graduate committee by the dean. Changes in the membership of the committee are made in the same way. The committee for the M.S. candidate shall consist of a minimum of three members as follows: the student's advisor; one

other representative member of the graduate faculty of the department in which major work is to be taken; and one representative of the graduate faculty outside the major department.

- b) The student's graduate committee shall work with the student's advisor in guiding the student's graduate program.
- c) The student's graduate committee shall conduct oral comprehensive and final examinations and act as moderators for the thesis.

GENERAL REQUIREMENTS FOR GRADUATE DEGREES

1. All full-time graduate students are expected to register for 12 semester hour credits per semester. This requirement includes research.
2. No student may take the comprehensive examination if the overall grade-point average is less than 2.5 or if the grade-point average for courses within the major department is below 3.0. Research credits shall not be counted in computing this average, and shall be graded as P—pass satisfactory, or F—fail. Other grade interpretations are described in Part I of this bulletin.
3. All cases of unsatisfactory student performance, including any grade of D or F, failure to pass written or oral comprehensive examinations, or thesis or final examinations require action of the dean to permit the student to continue.
4. Five or more copies of the thesis (as required) prepared according to standards approved by the school's graduate committee in final form three weeks or more before the date of graduation. (Graduation dates are in May, August, and December.) These copies are to be submitted in temporary binders. Following acceptance of the thesis and passing of the final examination, it shall be the responsibility of the candidate to present to the dean's office five copies of the thesis suitable for binding along with a check to cover the cost of handling.
5. The dean of the School of Graduate Studies will recommend granting a degree, only after all requirements have been fulfilled, including payment of all fees to the university, and after submission of the copies of the thesis for binding. Degrees are not granted *in absentia* unless specific written request is made to the dean and permission granted by him or her.
6. A minimum of 24 semester hours is required, exclusive of research credits. In practice, it is found that two years of study usually are necessary to complete the requirements. A time limit of five calendar years, beginning at the time of first registration, is placed on work to be credited toward the Master of Science degree. As many as eight semester hours credit may be given for work previously completed, upon recommendation of the student's graduate committee with concurrence by the dean.
7. Each student conducts a research study under the guidance of their advisors. This study is reported in a thesis, prepared in acceptable form and style. On approval of the thesis by the advisor, the students submit a copy to each member of the graduate committee.
8. The thesis is examined by the students' graduate committee members, acting as moderators, who shall decide upon its acceptability. The moderators may confer with one another before making their decision. Each moderator shall report to the dean through the advisor when the thesis is acceptable for defense. The thesis is approved only if the moderators accept it unanimously.
9. On approval of the thesis, the student appears for a final oral examination administered by the graduate committee (and any appointed additional moderator). The dean, or an appointee, serves as chairman of the examination committee. Final examination shall be open to the faculty, and its time and place (together with the candidate's name, department, and title of thesis) shall be announced at least seven days in advance.
10. The final examination of M.S. can-

didates includes the subject matter of course work as well as the thesis. A favorable vote, with no more than one negative vote, is required to pass the examination. Only members of the graduate committee and the examiner appointed by the dean shall vote. The dean, or a faculty representative, will attend all oral examinations and will cast a vote. No examiner may abstain from voting.

11. Candidates, having fulfilled all the requirements for the degree of Master of Science, are recommended by the dean of the School of Graduate Studies to the president for the degree.

TRAINEESHIPS AND ASSISTANTSHIPS

In the past, the department has been able to offer a limited number of federal traineeships (stipend, tuition, and fees) and clinical assistantships (salary). These will continue to be offered as funds allow. Interested students should make inquiries to the program director.

GRADUATE COURSES IN PHYSICAL THERAPY (PHT)

See graduate courses in allied health for descriptions for the following courses:

AHP 573 Teaching in Health Professional Schools

AHP 582 Supervision in the Allied Health Professions

AHP 591 Special Topics in Allied Health

AHP 594 Health Education Practicum

AHP 596 Supervisory and Administrative Practicum in Allied Health Clinics

601 Electromyographic Kinesiology. Semester course; 2 lecture and 2 laboratory hours. 3 credits. The emphasis of this course is on the theoretical and practical aspects of the use of electromyography as a tool to observe human movement, normal and pathologic. The student will have the opportunity to consider the electronic, physiologic, and anatomic principles related to the appropriate selection of electromyographic techniques for the study of movement. Particular emphasis will be placed on data reduction methods and interpretation of data. The student will develop beginning skills in performing the techniques necessary for recording parameters involved in movement.

602 Biomechanics. Semester course; 2 lecture and 2 laboratory hours. 3 credits. This course concerns the study of the effects of forces upon normal and

pathologic human form and movement. Classroom and laboratory sessions are designed to guide the student in the use of the measurement techniques necessary to form a detailed picture of moving man viewed as a mechanical system. Particular emphasis is placed on the techniques of modeling, cinematography, and electrogoniometry.

605 Foundations for Pathokinesiology. Semester course; 3 to 4 lecture hours. 3 to 4 credits. A study of the principles that form a foundation for pathokinesiology and therapeutic kinesiology. Integration of principles of human development and motor behavior with emphasis on abnormal motor behavior and its remediation will be presented.

606 Therapeutic Kinesiology. Semester course; 1 to 3 lecture and 3 clinical hours. 2 to 4 credits. A study of motor behavior in both normal and pathological conditions. Reading and discussion of the basic literature of current neurophysiological approaches to therapeutic exercise and an integration of these concepts into a comprehensive model of human movement.

607 Principles of Clinical Examination in Orthopaedic Physical Therapy. Semester course; 2 laboratory hours. 1 credit. May be repeated for a maximum of 2 credits. Principles and techniques for evaluating joint and soft tissue injuries and disabilities with an emphasis on history-taking, the Maitland Physical Format, and accessory motion testing.

608 Principles of Orthopaedic Physical Therapy. Semester course; 2 lecture hours. 2 credits. A detailed examination of the basic principles and rationale for physical therapy treatment approaches to orthopaedic problems. Principles of mobilization will be emphasized.

611 Research Process. 2 lecture hours. 2 credits. Readings, discussions, and reports on the current status of professional literature and the validation of clinical practice, clinical administration, and professional education. A model for professional development, the role of research in the validation process, and the basics of research design are presented, non-mathematically. Required of all students unless excused by the faculty.

690 Physical Therapy Seminar. Semester course; 1 lecture hour. 1 credit. Reports on current problems and issues in the field of physical therapy. May be repeated for a maximum of four credits; required for two semesters.

691 Special Topics in Physical Therapy. 1-4 credits. Guided independent study of specific topics not discussed in other courses or discussed in less detail in other courses. Student's topic of desired study must be identified and approved prior to enrollment.

692 Clinical Specialty Seminar. Semester course; 0.5 to 3 credits. Individual reports dealing in depth with the history, current status, and problems in a given area of clinical specialization. It is anticipated that the student will identify several potential thesis topics in the course of preparing these reports.

693 Clinical Specialty Practicum. 60 clock hours per credit. 1-9 credits. Prerequisite: appropriate courses in sciences basic to area of specialization. One semester

hour's credit per 60 clinical hours. Concentrated clinical experience in the student's chosen area of specialization under the guidance of an approval preceptor.

798 Research in Physical Therapy. 1-15 credits. Research in preparation for the master's degree thesis.

Department of Health Administration

FACULTY

Barker, Thomas C. *Professor, Dean, School of Allied Health Professions* Ph.D., State University of Iowa; planning, policy, health administration.

Breindel, Charles L. *Assistant Professor* Ph.D., Pennsylvania State University; health planning and policy.

Cullen, Benjamin T. Jr. *Professor and Associate Dean* Ed.D., University of Virginia; personnel/labor relations and health administration.

Harkins, Elizabeth B. *Assistant Professor* Ph.D., Duke University; long term care.

Heck, J. Louis *Assistant Professor* M.B.A., University of South Carolina; health care finance.

Jensen, T. Alan *Assistant Professor* Ph.D., Case Western Reserve University; organizational behavior.

Luke, Roice D. *Associate Professor and Chairman* Ph.D., University of Michigan; medical care organization, health economics and quality assurance.

Mark, Barbara A. *Assistant Professor* Ph.D., Case Western Reserve University; nursing administration and organizational behavior.

Norville, Jerry L. *Professor* M.S., University of Colorado; M.B.A., Midwestern State University; M.A., Antioch School of Law; health administration, long-term care, and personnel/labor relations.

Rossiter, Louis F. *Assistant Professor* Ph.D., University of North Carolina; health economics.

Shukla, Ramesh K. *Associate Professor* Ph.D., University of Wisconsin; systems analysis/management, manpower planning and health provider productivity.

Wan, Thomas T.H. *Professor* Ph.D., University of Georgia; health systems evaluation/analysis, medical sociology, and health demography/epidemiology.

Wiecking, David K. *Professor* M.D., John Hopkins University; L.L.B., University of Virginia; health care law.

Witherspoon, John M. *Associate Professor* M.D., Duke University; quality assurance.

Education in health administration at the university began in 1949 with the establishment of a graduate curriculum in hospital administration. Early graduates received a certificate; the master's degree was awarded beginning in 1955.

These early efforts grew and developed into the Department of Hospital and Health Administration which was established in 1972. The department now includes four major programs: (1) M.H.A. in health administration; (2) Ph.D. in health services

organization and research; (3) B.S. in health care management; and (4) a cooperative program leading to an M.S. in nursing administration from the School of Nursing. In addition to these educational programs, the Department of Health Administration includes a growing research program and is involved in a wide range of public service activities including continuing studies for health services administrators and other health professionals.

DEPARTMENTAL PURPOSE AND FUNCTIONS

The overall purpose of the Department of Health Administration is to provide educational programs and services related to the organization and administration of health services. In achieving that purpose, the department's principal functions are to provide high-quality education leading to careers in the administration of health care institutions, agencies and systems and to provide advanced training and education for persons who will teach, plan, evaluate, and investigate health care policies and medical care systems. Corollary functions are to provide assistance and other services for community organizations and to conduct health services and health policy research.

FACILITIES

The Department of Health Administration's master's and undergraduate programs are located in Randolph-Minor Annex, an historic building located on the corner of College and Broad Streets on the MCV Campus. The department's doctoral program and its learning research laboratory are located on the fifth floor of the Nursing Education Building.

The Medical College of Virginia Hospitals, one of the largest teaching hospitals in the nation, and MCV's other clinical facilities are readily accessible to the department's students and faculty. In addition, the department has clinical affiliations and close working relationships with a large number of health care organizations and agencies in Virginia and throughout the eastern part of the United States. The organizations and agencies are used extensively as clinical facilities in the department's educational programs.

ENDOWED AWARDS, LECTURESHIPS, AND PROFESSORSHIPS

The **Robert Hudgens Memorial Award** was established and endowed by the department's alumni association in cooperation with the American College of Hospital Administrators (ACHA). The Hudgens Award is presented annually to the person selected by a special ACHA committee as the most outstanding young hospital administrator in the United States. It is presented at the ACHA's Annual Congress each year.

The **Charles P. Cardwell Memorial Lectureship Series** was inaugurated and endowed by the department's alumni. It is held in conjunction with the ACHA's Annual Congress. The series is coordinated by a standing committee of the department's alumni association.

Endowed professorships have been established in honor of individuals who have played vital roles in the development of the Medical College of Virginia. The **Arthur Graham Glasgow Professorship of Hospital Administration** was established in 1957 in honor of Dr. Glasgow who had shown such a vital interest in hospitals.

The **Herman L. Mullins Award** is presented annually for the most outstanding thesis or management study completed by a graduate student in health services administration. This award was established by the M.H.A. Class of 1976 through the Health Administration Alumni Association as a lasting recognition for the contributions of Herman L. "Moon" Mullins as a teacher, advisor, and friend of the student.

GRADUATE PROGRAM IN HEALTH SERVICES ADMINISTRATION

PURPOSE

The graduate program in health services administration is designed to prepare individuals for administrative roles ultimately leading to top-level executive positions in complex health institutions. The curriculum combines emphases in strategic and operational management, thus orienting students toward the broad spectrum of managerial problems and functions likely to be encountered in health institutions.

The program's educational goals and

content are based upon the premise that a large number of students who select this curriculum aspire to become chief executive officers of health care organizations at some point in their careers. A comprehensive listing of these goals is set forth in a separate document, "Educational Goals of the Graduate Program in Health Services Administration."

The graduate program in health services administration is designed primarily for full-time students. A limited number of part-time students may be accepted into the program. The part-time program is intended primarily for persons who are already employed in the health industry. The admissions standards and degree requirements for part-time degree candidates are the same as those for full-time degree candidates.

The graduate program was initially accredited in 1955, one of the first programs in the United States to achieve that status. It has maintained this status ever since and is fully accredited by the Accrediting Commission on Education for Health Services Administration.

Admission Requirements

Applications are encouraged from individuals who have earned undergraduate and graduate degrees in any discipline or field of study. However, to be eligible for admission to the graduate program, completed course work must include basic preparation in economics, accounting, and business statistics. In addition, a working knowledge of basic, college-level algebra is necessary preparation for the graduate program's courses in systems analysis and evaluation.

The foundation requirements may be met by completing specified prerequisite courses at any accredited college or university or by completing specified foundation courses within the School of Business at Virginia Commonwealth University. These requirements are

1. One college-level semester course (3 credits) in accounting;
2. One college-level semester course (3 credits) in economics;
3. One upper-division semester course (3 credits) in statistics.

Any or all of these three foundation

courses may be taken in Virginia Commonwealth University's School of Business during the summer semester immediately prior to the fall term when the student enrolls in the graduate program in health services administration. The availability of these foundation courses provides an excellent opportunity for students without a strong background in business to fulfill the course work requirements for entrance into the graduate program. In addition, students who have met all or some of the prerequisite requirements may strengthen their preparation for the graduate program by taking other foundation courses in the Business School's summer session. These include courses in marketing, business law, finance, and other areas. The foundation courses **cannot** be applied toward the 54 semester hours required to qualify for the M.H.A. degree. Foundation courses at the graduate level are available only to those who have already been admitted to a graduate program offered by the department.

To be considered for admission into the graduate program in full-status, the applicant must meet the following minimum qualifications: (1) present evidence of personal achievement, scholarship, intellectual ability, and professional promise; (2) hold a baccalaureate or graduate degree from a college or university which is fully accredited by the Association of American Universities or by a regional accrediting agency; (3) have an overall grade-point average of 2.75 or higher on a four-point scale in undergraduate work or provide evidence of high achievement in a substantial amount of graduate-level coursework; and (4) attain a satisfactory score (at least 50th percentile) on the Graduate Record Examination Admission Test or the Graduate Management Aptitude Test.

Applicants who have completed the prerequisite course work and meet the other requirements may be admitted into the graduate program in *full status*. Students in full status are candidates for the M.H.A. degree. Full status is maintained so long as the student achieves a grade-point average of 3.0 in all course work each semester.

If an applicant presents qualifications that approximate the admissions requirements and standards, that applicant may (at the

discretion of the Admissions Committee) be admitted into the graduate program on *provisional status*. Advancement to full status may be approved by the faculty when the student has satisfactorily completed one or more semesters of graduate studies. Students admitted on provisional status who do not meet GRE/GPA standards will be dismissed from the graduate program at the end of their first semester of graduate studies if they have not earned at least a 3.0 grade-point average for all courses attempted or if they have earned a grade of less than "C" in any course. Complete information regarding academic requirements and standards is set forth in "Academic Policies and Regulations for the Graduate Program in Health Services Administration."

Virginia Commonwealth University is a state-aided institution, and preference is given to applicants with equal qualifications who are residents of Virginia. Persons from countries other than the United States may apply for admission to the department's graduate program. Foreign applicants must meet all the regular admission requirements, score a minimum of 600 on the Test of English as a Foreign Language, and submit evidence of financial responsibility as stated in Part I of this bulletin.

Requests for further information regarding admission requirements, standards, and procedures should be sent to University Enrollment Services, Graduate Admissions, Virginia Commonwealth University, 821 West Franklin Street, Richmond, VA 23284 or to the Department of Health Administration, School of Allied Health Professions, Box 203, MCV Station, Richmond, VA 23298.

Transfer Credit

Students who have earned graduate credit before entering the Department of Health Administration's graduate program may be permitted, at the discretion of the faculty, to transfer a maximum of six semester hours of credit to count toward the M.H.A. degree. Transfer credit may be allowed when, in the judgment of the faculty, the applicants have satisfactorily completed course work equivalent to courses in the graduate curriculum offered in this department. Normally,

transfer credit is approved at time of admission.

Curriculum

Students are required to complete a total of 54 semester hours (including transfer credit, if any) to qualify for the Master of Health Administration (M.H.A.) degree. This requirement includes 42 hours of core course work in combination with at least 6 semester hours of elective studies in health services administration and related disciplines such as business administration, public administration, urban and regional planning, and gerontology. In addition, six semester hours of practicum course work are required as a part of the administrative residency. At the discretion of the faculty, students with significant experience in health services administration may substitute additional elective courses for the administrative practicum course. The graduate program is designed to provide a balanced combination of academic studies and field experience to enable students to achieve the program's educational goals and become well-prepared to enter the field of health services administration.

The core curriculum of the graduate program in health services administration consists of 14 courses totalling 42 semester hours which must be completed by all degree candidates. These courses represent an integrated series of learning experiences designed to provide students with a common body of knowledge and skills which are considered to be essential. The core courses are as follows:

HAD 602	Health Care Organization and Services.....	3
HAD 606	Financial Management in Health Institutions.....	3
HAD 607	Advanced Financial Management in Health Institutions.....	3
BUS 608	Managerial Accounting.....	3
HAD 609	Health Systems Analysis and Evaluation I.....	3
HAD 610	Health Systems Analysis and Evaluation II.....	3
HAD 611	Hospital and Medical Law.....	3
HAD 612	Information and Management Systems in Health Care Institutions.....	3
HAD 614	Health Planning and Policy.....	3
HAD 624	Health Economics.....	3
HAD 645	Structure and Functions of Health Institutions.....	3
HAD 646	Organizational Behavior in Health Institutions.....	3
HAD 647	Administration in Health Institutions.....	3
HAD 648	Strategic Management In Health Care Organizations.....	3
	Total Core Requirement....	42

SPECIALIZATION

The core courses of the M.H.A. curriculum are open only to graduate students who are enrolled in the M.H.A. program or in one of the other graduate programs offered by the Department of Health Administration.

By combining advanced courses in health services administration and related disciplines, students are able to pursue individual interests and career goals through the development of specialized knowledge and skills in a particular area of concentration. These areas of elective concentration represent major areas of specialization within the field of health services administration.

Students may select their concentrations of electives at the time they enter the graduate program or at a later point in their graduate studies. A broad range of courses is available within each area of concentration. In addition to course work, students ordinarily complete an administrative residency within a health care organization related to their areas of concentration.

Areas of concentration that are available within the graduate program in health services administration include

1. Administration of hospitals and hospital systems;
2. Administration of long-term care facilities;
3. Health planning and policy with emphasis upon planning in the institutional setting;
4. It may be possible for other areas of concentration to be developed by students in concert with their faculty advisor and the director of the graduate program.

ADMINISTRATIVE RESIDENCY

Purpose of the Residency

The administrative residency is an integral part of Virginia Commonwealth University's graduate program in health services ad-

ministration. The basic purpose of the residency is to provide students opportunities to apply and further develop their administrative knowledge and skills through a period of applied experience in an operational setting. The administrative residency is directly supervised by experienced executives who serve as the student's preceptors.

Through a carefully selected and well-organized residency experience, students strengthen the foundation of general knowledge and skills gained through the core curriculum and gain further insight and expertise in their selected concentrations. Students will serve their residency in the type of health care organization in which they wish to gain specialized knowledge, skills, and experience. Overall policies and guidance for the administrative residency are established by the Department of Health Administration.

Appointment to the Residency

Students become eligible for entrance into the administrative residency after completing 48 semester hours of specified course work and achieving an overall G.P.A. of 3.0. Students on academic probation because of their performance during their final on-campus semester prior to their residency may, at the discretion of the faculty, be prevented from entering their residency even though their overall G.P.A. is 3.0 or higher.

In addition to meeting the above academic requirements, the student must, in the judgment of the faculty, present evidence of readiness for a clinical experience by demonstrating sufficient academic proficiency in the core areas of the curriculum and by demonstrating professional maturity.

The director of the graduate program in health services administration has the responsibility to make residency assignments. In making these assignments, the director will consider the preferences of the students, the preferences of the preceptors, and the recommendations of faculty advisors. Students' preferences are not always met.

The length of the administrative residency is variable, depending upon student background and experience. For most students,

the residency will be 11 months in length. Students who have had at least two years of prior experience in responsible management positions within health care organizations or agencies may petition the faculty to waive this requirement or reduce it to three months.

On-campus Commitments During the Residency

During the residency phase of the graduate program, students must attend regularly scheduled, on-campus seminars. During these seminars students will participate actively in other educational activities associated with course work HAD 693, 694, and 695 taken during the residency period.

Residency Policies and Procedures

A complete statement of academic policies and procedures relating to the administrative residency phase of the graduate program is set forth in "Administrative Residency Policies and Procedures," Section VI of the *Academic Policies and Regulations for the Graduate Program in Health Services Administration*.

Length of the Program

The curriculum is designed to provide students with some flexibility in determining the pace and length of their program of studies. Full-time students ordinarily will begin their studies during the fall semester and complete their course work requirements within 21 months. For most students this portion of the graduate program will be followed by an administrative residency of 11 months in length.

Depending upon their educational background and experience, the pace of studies they elect, and the length of their residency requirement (if any), some students will be able to complete all requirements and receive the M.H.A. degree within 21 months after enrolling in the graduate program.

REQUIREMENTS FOR GRADUATION

To qualify for the M.H.A. degree, students must meet the following requirements: (1) achieve an overall grade point average of 3.0 on a four-point scale for all graduate

curriculum course work; (2) satisfactorily complete all requirements of the administrative residency including required course work taken during the period; (3) pass a comprehensive examination administered near the end of the graduate program; and (4) in the judgment of the faculty, demonstrate sufficient maturity, development, and abilities in health services administration to constitute readiness to enter the profession of health administration.

Degrees are conferred at commencement exercises of the university in May.

ACADEMIC POLICIES AND REGULATIONS

Academic policies and regulations for the graduate program in health services administration are set forth in separate documents published by the Department of Health Administration. These departmental documents, as well as publications that state university-wide policies and regulations, may be obtained by applicants at the time of their interviews.

GRADUATE PROGRAM IN NURSING SERVICES ADMINISTRATION

The Department of Health Administration cooperates with the School of Nursing in offering the M.S. track in Nursing Services Administration. This jointly-sponsored program prepares graduates to assume top level management positions in the area of nursing services administration. A total of 56 semester hours and a thesis are required for the degree. Students take courses in the School of Nursing, School of Business, and in the Department of Health Administration in gaining the knowledge and skills related to the practice of administration in nursing.

The focus of the course of studies is both theoretical and experiential and seeks to promote the integration of administrative and nursing sciences. Emphasis is placed upon systematic methods of investigation, including the preparation and conduct of a research study. Practica are planned individually to capitalize upon student background and to promote individual growth.

A more complete description of the graduate program in nursing services administration is found in the School of Nursing section of this bulletin.

DOCTORAL PROGRAM IN HEALTH SERVICES ORGANIZATION AND RESEARCH¹

The Ph.D. program in health services organization and research prepares individuals for positions as faculty in a variety of health-related graduate and undergraduate programs, researchers, policy analysts, and top-level staff in complex health organizations. Its purpose is to provide students with the conceptual and analytical foundations essential for the study of health organization design, behavior, and management systems. Students in the Ph.D. program take courses in four main areas: (1) the program core content in health administrative sciences, (2) health services research methods, (3) an elective major field of study, and (4) an elective research minor.

Students are required to declare a major field of study and a research minor. The major field builds upon the administrative sciences core by providing students with depth in both theoretical and methodological subject areas. The program offers major field training in the following three areas: (1) organizational policy and planning, (2) organizational behavior, and (3) management and information systems. (Choice of the third field is available only to those students with training at either the baccalaureate or master's level in a quantitative area such as operations research, computer science, statistics, or industrial engineering.)

The research minor offers students the opportunity to apply their research to either a health specialty area (e.g., nursing, medicine, gerontology or occupational therapy) or an administrative problem area (e.g., multi-institutional systems, manpower planning, cost containment, or quality assurance). The research minor assists students in focusing their training in an area of anticipated dissertation research.

The Ph.D. degree is awarded after a student completes a minimum of 60 semester hours of course work, passes preliminary examinations covering the four major areas in the doctoral curriculum, and writes a

¹An application is in the process of being filed to change the name of this degree to Ph.D. in health administrative sciences.

doctoral dissertation. Full-time students can complete all required course work in four semesters and two summers. Full-time study beginning in the fall is preferred.

Admission Procedures and Requirements

Admission to the program which is open to students with clear career goals in health services administration and research is limited and competitive. Basic admission requirements include the following: (1) graduate-level degree in an academic or professional field with a grade-point average of "B" or higher; (2) completion of advanced-level courses in statistics and economics or equivalent course work; (3) a minimum score of 550 on verbal and 600 on quantitative tests of the Graduate Record Examination; (4) submission of transcripts and application forms; (5) three letters of recommendation; and (6) a personal interview with members of the Admission Committee, and (7) a working knowledge of college-level algebra and calculus. Experience in the health care industry is recommended prior to admission to the program. Foreign students should submit scores from the Test of English as a Foreign Language.

Financial Aid

Graduate assistantships with stipends of at least \$5,000 plus all tuition are available on the basis of merit to full-time students. Financial aid through the work-study program is also available.

Further information concerning the doctoral program in health services organization and research may be obtained by writing University Enrollment Services, Graduate Admissions, 821 West Franklin Street, Richmond, VA 23284, or the Department of Health Administration, School of Allied Health Professions, Virginia Commonwealth University, Box 203, MCV Station, Richmond, VA 23298.

GRADUATE COURSES IN HEALTH ADMINISTRATION (HAD)

500 Health and Medical Care Organization. Semester course; 3 lecture hours. 3 credits. Intended for students seeking degrees in disciplines other than health care administration and for special students who wish to learn about the health industry and health care organizations. Provides an overview of the health in-

dustry. Examines the organization and operations of major health care organizations with particular emphasis on hospitals.

502 Management in Health Care Facilities. Semester course; 3 lecture hours. 3 credits. Study of recent developments in management theory and practice in order to develop a foundation of technical, human, and conceptual skills necessary for successful performance as a health care manager. Focus of course learning activities is on management of departments and services in health care institutions, especially hospitals.

602 Health Care Organization and Services. Semester course; 3 lecture hours. 3 credits. Examines the structure and functions of the American health care industry, the concepts and processes of health and illness, the institutional and individual providers of health services and related concepts.

606 Financial Management in Health Institutions. Semester course; 3 lecture hours. 3 credits. Prerequisite: Financial Accounting. A theoretical and practical study of organization and functions of health care financial administration. Emphases are on institutional fiscal policies, accounting concepts and practices, internal and external controls, financial statistical reporting, and the use of financial data as management tools.

607 Advanced Financial Management in Health Institutions. Semester course; 3 lecture hours. 3 credits. Prerequisite: HAD 606. Advanced practices of health care financial management. Emphasis on techniques to aid in financial decision making. Areas of investigation and study include analysis of financial statements, cost allocations, reimbursements, rate setting, budgeting, and capital financing.

608 Seminar in Health Care Finance. Semester course; 3 lecture hours. 3 credits. Prerequisite: HAD 607. Advanced studies of financial issues and the application of analytic tools in case studies and exercises. Designed to enhance and strengthen the knowledge and skills provided in the graduate program's foundation and required courses in accounting and finance.

609 Health Systems Analysis and Evaluation I. Semester course; 3 lecture hours. 3 credits. Prerequisite: upper division course in statistics. Introduction to principles and methods employed in evaluation research and program evaluation as these relate to health services. Focus will be on conceptualization, design, and operational procedures used in program evaluation.

610 Health Systems Analysis and Evaluation II. 3 lecture hours. 3 credits. Prerequisite: HAD 609. Applications of traditional industrial engineering techniques in health care institutions. Applications of operations research techniques to health care planning, control and decision-making including deterministic, stochastic, and decision analysis models and their use in health services administration.

611 Hospital and Medical Law. Semester course; 3 lecture hours. 3 credits. Examines basic principles and practices of law affecting hospitals and medical practice: the legal aspects of patient care and treatment, medical services, and other hospital-patient related functions.

612 Information and Management Systems in Health Care Institutions. 3 lecture hours. 3 credits. Prerequisites: HAD 609 and HAD 610. Analysis of current information and management systems including manpower planning and productivity; financial planning and monitoring; quality assurance; staffing and scheduling; administrative information systems and patient care systems. Evaluation of alternative uses of computer technology in health care. Uses of national and organizational data bases.

614 Health Planning and Policy. Semester course; 3 lecture hours. 3 credits. Examines the planning process in the context of both the community and the institution. Considers the essential components of planning and the development of a sound structure for planning. Examines the legal, regulatory, economic, and human factors that influence the planning process.

615 Health Care Politics and Policy. Semester course; 3 lecture hours. 3 credits. Examines the political process with particular emphasis on the impact of politics on health care. Focuses on current political issues in the health field, examining conflicts and anticipating effects on the health system.

616 Seminar in Applied Health Planning. Semester course; 3 lecture hours. 3 credits. Prerequisite: HAD 614. Provides students with opportunities to apply planning methodology, including problem definition, research design, information gathering, and evaluation to actual health issues and problems.

617 Health Facility Design and Construction. Semester course; 3 lecture hours. 3 credits. Prerequisite: HAD 614. Examines the essential elements and process of designing and constructing health facilities.

623/Gerontology 623 Psychological Aspects of Illness and Disability. 3 lecture hours. 3 credits. An introduction to the theories and research of the field of health psychology. Topics include the application of psychological principles to the promotion and maintenance of health; prevention and treatment of illness; relationship of stress and illness; patient/physician communication; stress and the health care provider; treatment compliance; changing self-destructive health behaviors; institutions and health care; and care for the terminally ill.

624 Health Economics. Semester course; 3 lecture hours. 3 credits. Develops an understanding of (1) economics as a managerial tool in making choices or decisions that will provide for an optimum allocation of limited health care resources; and (2) economics as a way of thinking about and approaching issues of public policy in financing and organizing health and medical services. Individual research on crucial or controversial issues in the health field.

626 Comparative Health Systems. Semester course; 3 lecture hours. 3 credits. Examines the structure and functions of health care systems in nations other than the United States.

632 Personnel and Labor Relations in Health Institutions. Semester course; 3 lecture hours. 3 credits. Examines the procurement, development, and maintenance of an effective work force. An analysis of staff

development; health and safety; wage and salary administration; employee services; and labor relations.

634 Case Studies in Assuring the Quality of Health Care. Semester course; 3 lecture hours. 3 credits. Case studies that illustrate the relationship of administrative aims, strategies, tasks, and environment to the quality of health care. Examines the effects of health management, planning, and policy decisions on the delivery of health services.

636 Administration of Mental Health Programs, Institutions and Systems. Semester course; 3 lecture hours. 3 credits. Analysis of the current state of administration of mental health programs, institutions, and systems. Emphasis is on understanding both public and private mental health systems including goals, structure, functions, and financing. Also focuses on patient care concepts including diagnostic and treatment modalities and professional roles and standards. Regulations and legal aspects of mental health are considered.

638 Administration of Long-Term Care Facilities and Programs. Semester course; 3 lecture hours. 3 credits. Focuses on unique knowledge and skills considered essential to effective long-term care administration. Emphasis is on the professional role of the long-term care administrator in providing for the health and social needs of the chronically ill and elderly. Applied skills in addressing the technical, human, and conceptual problems unique to LTC are addressed through cases and field exercises.

645 Structure and Functions of Health Institutions. 3 lecture hours. 3 credits. Analysis of organizational and management theories applicable to health institutions. Considers organizational structure, technology, and the environment of health care institutions. Focuses on design and effectiveness and on planning and managing change in health care institutions.

646 Organizational Behavior in Health Institutions. Semester course; 3 lecture hours. 3 credits. Prerequisite: HAD 602 or permission of instructor. Focuses on the major concepts, principles, and theories of management and behavioral sciences as they relate to human behavior in health care institutions and agencies.

647 Administration in Health Institutions. Semester course; 3 lecture hours. 3 credits. Prerequisites HAD 603 and 646. Analysis of the current state of management study and practice with the objective of achieving a balanced development of both knowledge and skills in solving the human problems of administration in health institutions. The managerial process is critically examined with emphasis on individual behavior and development, intergroup behavior, and behavior in the total organization.

648 Strategic Management in Health Care Organizations. 3 lecture hours. 3 credits. Prerequisites: HAD 614 and 647. Integrative seminar on strategic decision-making in health care organizations. Considers the concepts and alternative models of strategic management, the strategic management process and the evaluation of strategic decisions.

690 Departmental Research Seminar. Semester course;

variable credit. Research seminar that focuses on research design and methods organized under a single topic or a series of related topics in health services research. Applied research training for master's-level students.

691 Special Topics in Health Services Organization and Research. 3 lecture hours. 3 credits. Prerequisites: two semesters of graduate work and permission of instructor. A seminar on the current state of knowledge and research within specialized areas of concern related to health services organization, planning, and assessment.

692 Independent Study in Health Services Administration. Variable credit. Offered in all semesters for students to investigate and study topics of major interests.

693, 694, 695 Practicum in Health Services Administration, I, II, III. 2 credits each. Prerequisite: admission to the administrative residency. Examination of contemporary problems and issues in the organization, administration, and evaluation of health services. A principal focus is the application of alternative approaches to administrative problem-solving. Special emphasis is placed on understanding of and appreciation for the internal and external factors that influence decision making in health care organization.

697 Directed Research. Semester course; variable credit. Special course offered on demand for one or more students who will design and implement an applied research project in the field setting under the guidance of a faculty sponsor. Focus of the course will be on the application of research methods to policy or operational problems of health care institutions.

701 Health Organization Design and Assessment. Semester course; 3 lecture hours. 3 credits. Prerequisite: HAD 602. Analysis of medical care organizations at both micro and macro levels. Critical review of empirical research in organizational analysis and design. Identifies measurement issues related to the quality of care and to formulation of evaluative research on health services programs.

702 Health Care Financing and Delivery Systems. Semester course; 3 lecture hours. 3 credits. Prerequisite: HAD 701. Critical review and evaluation of major innovations in organization, delivery, and financing of health care services. Selected topics may include cost function analysis of alternative health care delivery systems and consideration of alternative public financing of health care.

703 Strategies for Planned Change in the Health Field. Semester course; 3 lecture hours. 3 credits. Prerequisites: HAD 609 and 701. Critical review and analysis of principles and theories of planned change. Planning methodology is introduced that covers methods of health planning, program planning, and community diagnosis. The relationships between planning methods and implementation strategies are examined.

711 Long-Term Care Research. Semester course; 3 lecture hours. 3 credits. Prerequisites: HAD 609 or permission of instructor. Analysis of factors con-

tributing to problems in the delivery of services including ambulatory care and long-term care for the chronically ill and the aged. Emphasis is placed on the application of analytic designs and evaluation research to identify alternatives for institutionalization and examine the health care outcomes.

731 Advanced Health Economic Analysis. Semester course; 3 lecture hours. 3 credits. Prerequisites: HAD 624, 609, 610 or permission of instructor. Study of analytical methods and their applications to health economic problems. Topics include cost-benefit and cost-effectiveness analysis, linear, integer and dynamic programming, input-output analysis, and other advanced techniques for economic analysis.

732 Econometric Modeling in the Health Care Industry. Semester course; 3 lecture hours. 3 credits. Prerequisite: HAD 731 or permission of instructor. Application of statistical modeling techniques including utility models, Bayesian analyses, multiple regression analyses, time-series and cross-section analyses, and forecasting models and problems of the health industry. Techniques will be applied to such areas as demand for health services, supply of medical care, allocation of health care resources, hospital economics, and equity/efficiency of health manpower.

741 Health Industry Information Systems: Design and Evaluation. Semester course; 3 lecture hours. 3 credits. Prerequisites: HAD 609 and 610. Principles and methods of health services information systems design and evaluation. Considers characteristics, requirements, and development of information networks for planning, administration, operation, and health services research. Cost/benefit evaluation of management information systems in the health care industry are stressed.

742 Simulation Modeling in the Health Field. Semester course; 3 lecture hours. 3 credits. Prerequisites: HAD 741 and one computer course. Analysis of complex deterministic and stochastic models and their applicability to health services research. Focus is on formulation of simulation models for planning and policy analysis of macro health delivery systems.

743 Health Manpower Planning and Productivity and Analysis. Semester course; 3 lecture hours. 3 credits. Prerequisites: HAD 701, 702, 761. Examination of various health manpower planning models and assessment of the alternative approaches for improving the productivity of medical and allied health care manpower. Emphasis is on health manpower study design, planning methods, productivity analysis and utilization of manpower, and projection of manpower needs.

760 Quantitative Analysis of Health Care Data. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 624 and HAD 609 or permission of instructor. Research course emphasizing computer application and statistical analyses of health care data generated from secondary sources.

761 Advanced Epidemiological Principles and Methods. Semester course; 3 lecture hours. 3 credits. Prerequisites: HAD 609, BUS 624, or permission of instructor. Introduction of advanced epidemiological principles and methods. Topics will include causal inferences from

76 School of Allied Health Professions

epidemiological studies, methods of analysis of epidemiological data, sociopathogenic factors in mortality and morbidity of specific chronic diseases, and designs of prospective or retrospective studies using a community as an epidemiological laboratory. Emphasis will be given to application of epidemiological methods to health planning, policy analysis, health services research, and program evaluation.

762 Health Services Research Methods. Semester course; 3 lecture hours. 3 credits. Prerequisites: HAD 609, 761, and BUS 656 or equivalent. Application of multivariate statistical analysis and evaluation research methods to health services research. Emphasis is placed on the use of advanced statistical methods and designs to analyze panel data in the health field.

791 Directed Independent Study. Semester course; 1-3 credits. Prerequisite: permission of instructor. Research leading to a publication conducted under the guidance of a faculty member. Special studies or reading may also be arranged.

792 Independent Study in Health Services Organization and Research. Semester course; 1-3 credits. Special study or research leading to a publication. Conducted under the guidance of a faculty sponsor.

793, 794, 795 and 796 Research Practicum. Semester course; 1-3 credits. Supervised investigation of selected problems in health services research. Field research open only to second-year doctoral students who have completed the preliminary examination.

798 Thesis I. 3 credits. Independent research to provide the opportunity for the student to select, organize, and report the results of an investigation in a field of major interest.

799 Thesis II. 2 credits. Prerequisite: HAD 798. Continuation of research study begun in HAD 798.

898, 899 Doctoral Dissertation in Health Services Research. Semester course; 3 credits. Prerequisite: completion of required course work and comprehensive examination. Dissertation research under direction of faculty advisor. A minimum of nine semester hours required for Ph.D. degree.

For descriptions of courses in other schools and departments, see the current *Virginia Commonwealth University Graduate Bulletin* and/or *Virginia Commonwealth University Undergraduate Bulletin*.

Department of Nurse Anesthesia

FACULTY

Beeston, John T., III *Assistant Professor* B.S., University of Minnesota; nurse anesthesiology.

Bowman, Thomas *Instructor* M.S., Virginia Commonwealth University; nurse anesthesiology.

Ciresi, Salvatore A. *Assistant Professor* M.S.N., University of Washington; nurse anesthesiology.

Hinchee, Annette *Instructor* M.S., Virginia Commonwealth University; nurse anesthesiology.

Jones, Barbara *Instructor* M.S., Virginia Commonwealth University; nurse anesthesiology.

Keohane, Diane C. *Instructor* B.S.N., Wagner College; nurse anesthesiology.

Magennis, Michael J. *Instructor* M.S.N.A., Virginia Commonwealth University; nurse anesthesiology.

McDougle, Mary Lynn *Instructor* B.G.S., Virginia Commonwealth University; nurse anesthesiology.

Montesanti, Adrienne *Instructor* R.N., C.R.N.A., Medical College of Virginia; nurse anesthesiology.

Shalenko, Paul C. *Assistant Professor* M.M.S., Emory University; nurse anesthesiology.

Vining, Jay C. *Instructor* B.S., California State University; nurse anesthesiology.

Watson, Herbert T. *Chairman and Associate Professor* M. Ed., Columbia University; nurse anesthesiology.

BASIC PROFESSIONAL PROGRAM HISTORY

The Department of Nurse Anesthesia was organized in 1969. The Master of Science degree in nurse anesthesia is the first such offering through a School of Allied Health Professions in the United States. It was implemented in 1979 and represents a significant milestone for the profession of nurse anesthesia. Equally significant has been the subsequent approval of the post-graduate certified registered nurse anesthetist (CRNA) program.

PHILOSOPHY

The faculty of the Department of Nurse Anesthesia believes that the master's degree level of education is fundamental to preparing diversified clinical practitioners, future teachers, coordinators, and directors of nurse anesthesia educational programs. We view nurse anesthesiology as an expanded role of nursing in which the nurse anesthetist provides nursing and medically delegated services, instruction, evaluation, direction of nurse anesthesia services, and teaching educational processes. We believe that professional competence is based on self-awareness, an appropriate value system, and the possession of cognitive process capabilities. We believe that clinical teaching, acquisition of clinical skills, competence, and safe practice can best be promoted when the curriculum design supports the philosophy of practice, and that the ability to utilize and retain theoretical knowledge is best facilitated through reinforcement from a variety of directions.

OBJECTIVES

The overall objective of the Department

of Nurse Anesthesia is to prepare registered professional nurses for practice in the specialty art and science of anesthesiology.

This rather broad objective is accomplished by implementation of the following:

1. An in-depth presentation of the basic sciences associated with anesthesia practice, with emphasis on understanding the practical application of concepts.
2. Focusing attention on the ultimate role of the nurse anesthetist as a member of the health team.
3. Providing integration of the clinical and didactic teaching programs so that the two are closely correlated throughout the course of study.
4. Placing emphasis on the great need for educators in the field, and encouraging those whose talents are oriented to pursue this goal.
5. Encouraging continued professional education by self-study and discipline, recognizing that these are the only keys to total professional maturity.
6. Providing students with a challenging and diverse selection of surgical and resuscitative experiences with opportunity for constant criticism and evaluation.

ACCREDITATION

The nurse anesthesia program is fully accredited by the Council on Accreditation for Nurse Anesthesia Educational Programs. Graduates are eligible to take the examination for certification conducted by the Council on Certification of Nurse Anesthetists.

Admission Requirements

In addition to the general university requirements, the requirements for admission to the Master of Science in nurse anesthesia are

1. Baccalaureate degree in nursing or equivalent (a related basic science degree and graduate of an NLN accredited school of nursing).
2. Current licensure as a registered professional nurse in Virginia.
3. A 3.0 grade point average is preferred (other factors may be considered).

4. An average of 500 on State Board Examinations with no area below 450.
5. Three semester hours of college statistics—preferably biostatistics.
6. Completion of the Graduate Record Examination (GRE) verbal, quantitative, and analytical.
7. A minimum of one year (two years preferred) experience in an area of acute care nursing. Partial credit is granted for emergency room and recovery room experience. No credit for operating room nursing experience.
8. Personal interview with members of the Admissions Committee.

Further inquiries should be made to University Enrollment Services, Graduate Admissions, Virginia Commonwealth University, 821 West Franklin Street, Richmond, VA 23284.

CURRICULUM

First Year, Fall Semester		Credits
NUA 501	Fundamentals of Anesthesia Practice	3
PHC 521	Medicinal Chemistry for Nurse Anesthetists I	4
PMC 515	Pharmacology for Nurse Anesthetists I	3
PIO 501	Advanced Mammalian Physiology	5
		15
First Year, Spring Semester		
NUA 531	Regional Anesthesia	2
PHC 522	Medicinal Chemistry for Nurse Anesthetists II	3
PMC 516	Pharmacology for Nurse Anesthetists II	3
NUA 533	Pathophysiology: Anesthetic Considerations	3
NUA 555	Ethical and Legal Aspects of Anesthesia Practice	2
NUA 593	Clinical Practicum I	1
		14
First Year, Summer Semester		
NUA 535	Historical Development of Anesthesia	1
NUA 551	Advanced Practice and Principles of Anesthesia	4
NUA 553	Biomedical Instrumentation for Nurse Anesthetists	2
NUA 594	Clinical Practicum II	5
		12
Second Year, Fall Semester		
NUR 611	Methods of Research	3
NUA 601	Physical Assessment	3

78 School of Allied Health Professions

AHP 573	Teaching in Health Professional Schools	3
NUA 692	Clinical Practicum III.	4
		13
Second Year, Spring Semester		
HCM 502	Management in Health Care Facilities	3
NUA 631	Senior Clinical Seminar	1
NUA 681	Clinical Thesis I	2
NUR 612	Research Seminar in Nursing	1
AHP 574	Allied Health Education Practicum I.	1
NUA 693	Clinical Practicum IV.	4
		12
Second Year, Summer Semester		
NUA 699	Clinical Thesis II	4
NUA 694	Clinical Practicum V	5
		9

GRADUATE COURSES IN NURSE ANESTHESIA (NUA)

501 Fundamentals of Anesthesia Practice. Semester course; 3 lecture, 5 clinical, and 1 laboratory hour. 3 credits. This course introduces the beginning practitioner to those concepts necessary to plan and execute an anesthetic individualized for a patient which ensures a margin of patient safety while meeting the surgical requirements. Integrated in this course are selected concepts of respiratory therapy which interface with anesthesia. (Program includes a four-week clinical affiliation in respiratory therapy.)

531 Regional Anesthesia. Semester course; 2 lecture hours. 2 credits. A study of the theoretical and practical considerations involved in the administration and management of regional analgesia: Neuroanatomy, neurophysiology, neuropharmacology, indications, contra-indications, techniques, complications, and their prevention related to selected blocks. (Clinical anesthesia practicum will include practical experience in the administration and/or management of selected blocks.)

533 Pathophysiology. Semester course; 3 lecture hours. 3 credits. Pathophysiology of the neuromuscular, cardiovascular, respiratory, excretory, and endocrine systems; infectious diseases, gastrointestinal disorders; nutritional disorders; connective tissue diseases; muscle, skin, bone disorders; and environmental and behavioral disorders. The pathophysiology will be studied in relationship to anesthetic considerations.

535 Historical Development of Anesthesia. Semester course; 1 lecture hour. 1 credit. A study of the history of anesthesia, to include the evolutionary stages of the development of anesthesia and the professional organizations: the American Association of Nurse Anesthetists and the American Society of Anesthesiologists.

551 Advanced Practice and Principles of Anesthesia. Semester course; 4 lecture hours. 4 credits. This course delineates those practices and techniques of anesthesia

management which are considered as situation-specific for specialized surgical procedures, diagnostic, or therapeutic procedures; includes the obstetrical, pediatric, and geriatric patient.

553 Biomedical Instrumentation for Nurse Anesthetists. Semester course; 2 lecture hours. 2 credits. A course surveying the basic essentials of biomedical instrumentation as utilized in those electronic devices most often encountered by nurse anesthetists; to include a brief descriptive review of the basic laws of electrical circuits and the physical principles of biophysical measurement.

555 Ethical and Legal Aspects of Anesthesia Practice. Semester course; 2 lecture hours. 2 credits. This course includes five areas of professional focus: psychosocial, ethics, legal aspects, organization and management of an anesthesia department, and basic life support (CPR) for health professionals.

593 Clinical Practicum I. 9 clinical hours. 1 credit. Pre-operatively conducts interviews, prepares anesthesia care plans with selection of anesthetic agents and techniques, calculates fluid requirements. Is introduced to clinical area with supervised participation in actual administration of anesthesia. Demonstrates knowledge of equipment and monitors, skills, dexterity, and ability to integrate physiological data in anesthesia management, its termination, and post-anesthetic care.

594 Clinical Practicum II. 40 clinical hours. 5 credits. Continuation of NUA 593. Demonstrates internalization of theoretical concepts and techniques and application in anesthetic management. Emphasis on assuming greater responsibility for total anesthetic regime. Progresses to a greater variety and more complex anesthetic managements, to include pm, nights, and weekend duty. Gains experience in emergency and acute trauma surgery.

601 Physical Assessment. Semester course; 3 lecture hours. 3 credits. A didactic and laboratory study of the physical examination to provide the graduate with the capability of performing a screening, pre-anesthesia examination aimed at identifying pathology rather than diagnosing particular disease entities, to include taking an appropriate health history.

692 Clinical Practicum III. 30 clinical hours. 4 credits. Continuation of NUA 594. Intensive clinical experience in each of the clinical anesthesia areas. Greater emphasis is placed on development of independent decision-making in planning, managing, terminating, and follow-up anesthesia care. Includes rotation of clinical experience to include affiliations at Richmond Memorial, Crippled Childrens, St. Lukes (respiratory therapy), and Veterans Administration Hospitals to gain experience in management of specialized anesthetic considerations, and functioning in a variety of clinical settings in conjunction with certified registered nurse anesthetists and staff attending anesthesiologists. Assesses clinical experience and plans for anesthesia project.

693 Clinical Practicum IV. 30 clinical hours. 4 credits. Continuation of NUA 692. Affiliations to specialized areas continue. Beginning to function with minimum of

supervision from certified registered nurse anesthetists and staff attending anesthesiologists. Pursues independent library research and collects clinical data to support anesthesia project.

694 Clinical Practicum V. 40 clinical hours. 5 credits. Continuation of NUA 693. Intensive application of all previous clinical experiences to demonstrate development of independent thought and judgment and ability to function with minimum of supervision. Correlates clinical data with anesthesia project in preparation for presentation. Reviews all clinical experiences in preparation for writing of qualifying examination of American Association of Nurse Anesthetist. All clinical requirements are completed.

698 and 699 Clinical Thesis I and II. 6 credits. Required of all students, the independent clinical study provides the student the opportunity to select, organize, and report the results of an investigation into some specific area of interest to clinical anesthesiology. The project study will be written in a publishable format.

POST GRADUATE—CERTIFIED REGISTERED NURSE ANESTHETIST (CRNA Program)

The Department of Nurse Anesthesia offers, based on advanced standing, a Master of Science in nurse anesthesia for the certified registered nurse anesthetist (CRNA).

PHILOSOPHY.

The postgraduate CRNA program philosophy is in concurrence with that stated in the basic graduate program. It is further believed that the curriculum as planned provides the postgraduate CRNA a greater depth of study in the basic sciences and anesthesiology.

This central focus on expanded knowledge in clinical anesthesia practice will be ultimately reflected in improved overall patient care.

The curriculum is further enriched to provide the clinical specialist/practitioner in nurse anesthesia with beginning skills in educational instruction, departmental management, research, and consultation.

CURRICULUM

Three Semesters (12 months)

Fall Semester

PIO 501	Advanced Mammalian Physiology
AHP 573	Teaching in Health Professional Schools
NUA 601	Physical Assessment
NUR 611	Methods of Research

Spring Semester

HCM 502	Management and Health Care Facilities
PMC 516	Pharmacology of Anesthetic Agents/Adjuncts
PHC 532	Medicinal Chemistry for Nurse Anesthetists II
NUA 531	Regional Anesthesia
NUA 533	Pathophysiology: Anesthetic Considerations
AHP 574	Allied Health Education Practicum I
NUR 612	Research Seminar in Nursing
NUA 698	Clinical Thesis I

Summer Semester

NUA 553	Biomedical Instrumentation for Nurse Anesthetists
NUA 551	Advanced Practice and Principles of Anesthesia
NUA 631	Advanced Senior Clinical Seminar
NUA 699	Clinical Thesis II
NUA 696	Advanced Clinical Practicum

ADMISSION REQUIREMENTS

Requirements for admission to the Master of Science in nurse anesthesia for the post graduate certified registered nurse anesthetist (CRNA).

1. A baccalaureate degree in nursing or equivalent (a related basic science degree and graduate of an NLN accredited school of nursing).
2. Graduation from a nationally accredited educational program in nurse anesthesia.
3. Certification by national examination as a certified registered nurse anesthetist (CRNA).
4. Current recertification as a CRNA by the National Council on Recertification for Certified Registered Nurse Anesthetists.
5. Current licensure as a registered professional nurse in Virginia.
6. A 3.0 grade point average is preferred (other factors may be considered).
7. Acceptable scores on the Graduate Record Examination (GRE) Aptitude Test.
8. A college statistics course (4 quarter hours or 3 semester hours), preferably biostatistics.
9. Prerequisite to NUA 532 Medicinal Chemistry II: 4 quarter hours or 3 semester hours each in biochemistry and organic chemistry.

10. A minimum of one year's experience as a certified registered nurse anesthetist (CRNA).
11. References from current supervising nurse anesthetist (CRNA), chairman/chief anesthesiologist, and one other.
12. Personal interview with members of the Admissions Committee.
13. Proficiency Examination (Advanced Standing).

ADVANCED STANDING

Advanced standing is based on the following criteria:

1. Graduation from a nationally accredited educational program in nurse anesthesia.
2. Certification by national examination as a Certified Registered Nurse Anesthetist CRNA.
3. Current recertification as a CRNA by the National Council on Recer-

tification for certified registered nurse anesthetists.

4. Proficiency examination. Part A—Written: 100 multiple choice objective questions Part B—Oral: two anesthesiologists and 2 CRNA graduate faculty.

Advanced standing of one third (25 SH) of the generic Master of Science degree in nurse anesthesia curriculum (75 SH) will be awarded for the following courses (non-transferable to the VCU transcript):

		<i>Credits</i>
NUA 501	Fundamentals of Anesthesia Practice.	3
NUA 535	Historical Development of Anesthesia.	1
NUA 555	Ethical and Legal Aspects of Anesthesia Practice.	2
NUA 593	Clinical Practicum I.	1
NUA 594	Clinical Practicum II.	5
NUA 692	Clinical Practicum III.	4
NUA 693	Clinical Practicum IV.	4
NUA 694	Clinical Practicum V.	5
		25



PART IV—School of the Arts

ADMINISTRATIVE OFFICERS

MURRY N. DePILLARS, B.A., M.A., Ph.D.

Dean

ROBERT F. HESTER, B.S., M.A.

Associate Dean

THOMAS DeSMIDT, A.A., B.F.A., M.F.A.

Assistant Dean

WILLIAM STEWART, B.F.A., M.Ed., D.Ed.

Director of Graduate Studies

The School of the Arts of Virginia Commonwealth University had as its beginning a sculpture course offered in 1926. In 1928 a one-faculty art department was formed under the direction of Miss Theresa Pollak and since that date has grown to its present organization, achieving national recognition through its quality program in the visual and performing arts.

In 1969 the Department of Dramatic Art and Speech and the School of Music, formerly independent units within Virginia Commonwealth University, were combined with the School of Art to form the present School of the Arts.

The School of the Arts is accredited by the National Association of Schools of Art and Design and the National Association of Schools of Music and offers a rich and unique concept of graduate study for students in the fine and performing arts. It is one of the few state-aided professional art schools in the nation with a professional curriculum within a combined academic and

professional environment. Located within an urban complex of higher education, students are provided with the advantages of comprehensive facilities as well as professionally competent faculty.

The rapidly growing graduate program offers advanced degrees in ten departments in the following areas of study:

Ph.D. in Art History¹

Master of Arts, Art History

Historical

Museum Studies

Master of Art Education

Master of Fine Arts

Crafts

Ceramics

Furniture Design

Glassworking

Jewelry or Metalworking

Textiles

Design

Interior Environments

Photography/Film

Visual Communications

Painting and Printmaking

Sculpture

Theatre

Acting

Costume Design

¹To begin fall, 1984 subject to final approval by the State Council of Higher Education for Virginia.

Directing
 Dramaturgy
 Stage Design/Technical Theatre
 Theatre Education
 Master of Music
 Applied Music
 Church Music
 Composition - Theory
 Conducting
 Education
 Music History and Literature
 Piano Pedagogy
 Master of Music Education

The School of the Arts has a full-time faculty of 146.

GRADUATE STUDENT STATUS

The School of the Arts recognizes two categories of graduate students. The first is comprised of those who are accepted provisionally or as regular students into the graduate degree programs of the various departmental areas. These students are considered regular or continuing graduate students and may matriculate full-time or part-time except for the residence limitation discussed elsewhere in this bulletin. The second category is that of the special graduate student.

Holders of the baccalaureate degree from recognized institutions may enroll in graduate courses as special graduate students, but such courses are not applicable toward a graduate degree from this institution unless the student is accepted into a graduate degree program prior to the conclusion of the semester in which the student registered as a special graduate student. This consideration is intended solely to give those graduate degree applicants whose expectation of eventual acceptance into a graduate degree program is high, an opportunity to begin graduate work while their application material is being completed and processed.

Holders of the baccalaureate degree who wish to take graduate work for their own enrichment, but who do not intend working in a graduate degree program toward a graduate degree, are also considered special graduate students. Students who have made application to a graduate degree program who cannot be accepted without remedial, additional, or provisional course work and who wish to come to this institution to take

such course work are also considered special graduate students. Normally in the School of the Arts such work is taken at the undergraduate level. Special graduate students must have written permission to enroll in undergraduate or graduate courses from the director of graduate studies and the chairman of the appropriate department.

ADMISSION PROCEDURE

Applications for admission to graduate degree programs in the School of the Arts may be obtained in person or by mail from the Office of Graduate Studies, School of the Arts, Virginia Commonwealth University, 325 North Harrison Street, Richmond, VA 23284.

ADMISSION REQUIREMENTS

A. For all degrees — M.A., M.A.E., M.F.A., M.M., and M.M.E.

1. Applicants should hold the baccalaureate degree from an accredited institution.
2. It is expected that applicants will have a 3.0 (B) average on the last 60 semester hours of undergraduate work.
3. The Miller Analogies Test² or the Graduate Record Examination is required of all applicants except those for art history and music. The Graduate Record Examination is required of applicants for art history. The audition and examinations required of applicants for music are described in the program descriptions for the M.M. and M.M.E. degrees.

B. The prospective student should consult the appropriate section of this bulletin for additional admission requirements for a particular degree program.

ADVISING

All students accepted into advanced degree programs must make an appointment with the chairman of the department prior to

²By appointment with the Department of Psychology, or at most other universities. The Miller Analogies Test is a high-level mental ability test which requires the solution of a series of intellectual problems in the form of analogies, mostly verbal.

registration for their first semester of course work. Normally the student's initial advisor will be the chairman of the department, but students may be assigned an advisor more directly related to their areas of concentration.

Students are also encouraged to consult with the faculty members outside their major area and arrange with appropriate departmental chairmen to use facilities and equipment available in other departments.

REGISTRATION

Graduate art students are urged to plan their schedules and register during advance registration. Registration materials for students accepted into advanced degree programs are available in the department during the advance registration and registration periods. The advantage of advance registration is that of securing places in classes before they are closed and of obtaining proper counsel from advisors. All graduate students must see their assigned advisors for schedule planning and signature approval. New special graduate students or those contemplating registration as such must secure written permission to register from the director of graduate studies, the School of the Arts.

CONTINUOUS ENROLLMENT POLICY FOR GRADUATE STUDENTS

Graduate students in the School of the Arts must observe the University Continuous Enrollment Policy as explained in Part I of this bulletin.

A candidate for any advanced degree requiring a thesis, after completing all formal course work, must register for at least one semester hour of credit in ART 799 Thesis each term, except summer, until the thesis is completed. If graduate degree candidates expect to avail themselves of the faculty and the resources of the university in the preparation of the thesis during a summer term, they must register for one semester hour during that term also.

A candidate for the M.F.A. in crafts, painting and printmaking, and sculpture, after completing all formal course work, must register for at least one semester hour credit in an appropriate graduate seminar each term, except summer, until the

graduate exhibition is presented and documented.

A candidate for the M.M.E. degree, after completing all formal course work, must register for at least one hour of MUE 687 Research Assessment and Music Interaction each term, including summer, until the required research report is completed.

The grade of "P" or "F" is awarded for credit needed by all candidates to be continuously enrolled, except for those in the M.F.A. program in painting and printmaking who are awarded a letter grade.

SPECIAL CHARGES

All graduate students enrolled in full-time degree programs (nine semester hours or more) are charged a comprehensive lab fee of \$50 each semester. Graduate students enrolled part-time in degree programs (less than nine semester hours) are charged a comprehensive laboratory fee of \$25 each semester. No comprehensive laboratory fee is charged students who are registered only in course work to complete thesis or to satisfy the one credit requirement for continuous enrollment. Special graduate students enrolled in any of the numerous courses which require an additional outlay for materials will be billed for those individual fees by the Office of Student Accounts.

FINANCIAL AID

The School of the Arts awards a limited number of graduate assistantships to full-time students. Applications should be made directly to the chairman of the department in which the applicant proposes to major.

When funds are available, the Office of Graduate Studies of the School of the Arts also awards a limited number of scholarships to degree-seeking graduate students. Announcements are posted and applications are available for these awards at the beginning of each academic year.

ADVANCED DEGREE CANDIDACY

Students seeking an advanced degree in all programs except art history must apply for advanced degree candidacy. Those seeking the M.A.E., the M.M., the M.F.A. in crafts, and the M.F.A. in design must make ap-

plication during or after the completion of the first nine semester credits of graduate work and prior to the completion of 16 semester credits. Those seeking the M.F.A. in painting and printmaking, the M.F.A. in sculpture, and the M.F.A. in theatre must make application during or after the completion of the first 15 semester credits of graduate work and prior to the completion of 24 semester credits. Applications for candidacy are made on form (2.1)³ which is available in the Office of Graduate Studies, School of the Arts. There are two requirements for admission to candidacy. These are (a) certification by the department in which the applicant is matriculating that the applicant has met departmental expectations, and (b) the attainment of the minimal 3.0 (B) average. Ordinarily the department will arrange an examination and/or review of creative work or performance as the basis of its judgment. Upon the successful completion of a minimum of nine credit hours of course work and upon certification by the department involved that the student is prepared adequately to continue his degree program, the School of the Arts will admit the student to candidacy. Admission to degree candidacy is not an automatic process; the application for candidacy is approved by the department only after careful evaluation.

Students who are found inadequately prepared to continue their graduate programs will be advised to supplement the program minima with additional course work and candidacy will be suspended until the supplemental program requirements are met. Students whose tests, grade-point average, and/or creative work demonstrate conclusively no likelihood of a successful completion of a graduate degree program will not be admitted to candidacy by the School of the Arts. Admission to an advanced degree program does not constitute admission to advanced degree candidacy.

SCHOOL OF THE ARTS RESIDENCY REQUIREMENTS

Candidates for the Master of Fine Arts

degree in crafts, painting and printmaking, sculpture, and theatre must complete a minimum of one-third of their degree program semester-hour credits within one calendar year, either at the beginning or toward the end of their program of study.

Candidates for all master's degrees in the School of the Arts have five years plus two possible extensions of one year each to complete all degree requirements. The above limitations apply to both full- and part-time students. A petition for an extension is initiated with the academic or thesis advisor.

ADVANCED DEGREE REQUIREMENTS

1. Candidates must achieve no less than a "B" in each major course and a "B" average in the degree program as a whole.
2. A maximum of nine graduate credits may be transferred from other accredited institutions and applied to any of the graduate degree programs in the School of the Arts upon approval by the director of graduate studies.
3. A thesis is a requirement for all advanced degree programs in the School of the Arts except for the M.A.E. in art education (optional), the M.F.A. in the visual arts, and the M.M.E. in music. The thesis is undertaken and developed in the context of the course ART 799 and carries from three to six credits. Depending on the discipline involved, the thesis may be essentially scholarly or creative in content and form. In either instance, the written thesis or the thesis statement (when the thesis involves creative works or performance) is done in a form that can be retained by the university. A thesis proposal must be submitted and approved by the chairman of the department and a thesis committee appointed before the candidate enrolls in ART 799. In most cases the thesis committee is composed of the candidate's thesis advisor, a departmental reader, and the director of graduate studies.

Candidates for the M.A. degree in art history should contact the Department of Art History for specific information and procedures for completing the thesis requirement.

³This procedure must be followed by the student before November 1 of the fall semester or before March 1 of the spring semester.

After enrolling in ART 799, the candidate should obtain a copy of *The Preparation of Thesis* from the Office of Graduate Studies. This information sheet describes the stages in submission of thesis to the candidate's committee, the proper typing paper and reproduction process, the stylebook to be used, binding information, etc. When the thesis is completed, a final examination is arranged. This examination, which includes a defense of the thesis, is oral in nature. At the conclusion of the successful final examination, the candidate's thesis committee signs the copies of the thesis and assigns a grade for it (ART 799). The candidate then delivers the necessary copies of the thesis to the Office of Graduate Studies for the dean's signature and binding by the library. The library of Virginia Commonwealth University receives two copies, the Office of Graduate Studies receives one copy, and the department involved receives one copy.

4. An exhibit or performance, adequately documented, is required of every candidate for the M.F.A. degree in crafts, painting and printmaking, and sculpture. The candidate for the M.F.A. degree in crafts must present a cumulative exhibit of work near the end of the program of study.
5. An approved research report is required for the M.M.E. degree in lieu of thesis.

THE SCHOOL OF THE ARTS LIBRARY

The School of the Arts Library, located in the Pollak Building, has a collection of more than 335,000 slides and an extensive collection of exhibit catalogs from various museums and galleries. There is also a working collection of current art publications and magazines.

Virginia Commonwealth University is a short distance from Washington, D.C., Baltimore, Philadelphia, and New York City and the museums, libraries, and research facilities in those urban areas.

GRADUATE COURSES IN ART (ART)

530 Guided Study Abroad. Semester course; 1-6 credits.

601-602 Seminar in Art. Continuous course; 3-3 credits. Discussion and research in the visual arts providing experience and involvement in the various studio areas for students not concentrating in these areas.

592, 692 Individual Projects/Field Work. Semester courses; 1-6 credits. By appointment with director of graduate studies after approval by department chairman. (Obtain individual research project form from the dean's office prior to enrollment.) Individual work for graduate students.

690 Methods of Art Research. Semester course; 2 credits. Review of selected research methods relevant to the composition of a thesis in the student's master's degree area. Preparation of a proto-thesis concludes course work.

705, 706 Research in the Arts. Semester courses; 3, 6 credits. By appointment with director of graduate studies after approval by department chairman. (Obtain individual research project form from the director of graduate studies prior to enrollment.) Individual research for graduate student.

799 Thesis. Semester course; 1-6 credits. By appointment with director of graduate studies after approval by department chairman and review of candidate's record. (Obtain thesis plan approval form from director of graduate studies prior to enrollment.)

Department of Art Education

FACULTY

Burton, David *Assistant Professor* Ph.D., The Pennsylvania State University; philosophy, design.

Ferris, Michael *Associate Professor* D.Ed., Ball State University; teaching methods, ceramics.

Hynson, Priscilla C. *Associate Professor* Ed.D., George Peabody College; teaching methods, related arts.

Landis, Alan L. *Professor* D.Ed., The Pennsylvania State University; curriculum, jewelry.

Reeves, Daniel *Professor and Chairman* Ed.D., Illinois State University; research, painting.

Tisinger, Betty *Associate Professor* D.Ed., The Pennsylvania State University; multicultural arts, art for the exceptional student.

Wright, James *Associate Professor* D.Ed., The Pennsylvania State University; theory, sculpture.

The Master of Art Education program attempts to expand and further refine each M.A.E. student's ability, knowledge, and attitudes in order to provide the profession with more effective art teachers, coordinators, supervisors, and other educational specialists in the arts.

PROGRAM DESCRIPTION

The M.A.E. program is structured on an individualized base rather than on a prescribed program of graduate studies. To benefit from the program's flexibility, each M.A.E. student must assess his or her own educational needs and professional goals. From this assessment, and with a graduate advisor's assistance, the M.A.E. student

gains the opportunity and the responsibility to help determine a viable structure for the content and sequence of an individualized program of graduate studies.

Such a program can utilize the collective expertise of the art education faculty as well as appropriate community resources. Graduate course work, therefore, could include both on-campus and off-campus involvement.

Opportunities for personal growth through the M.A.E. program also include the rich resources of other university graduate departments in the visual and performing arts, education (including supervision, administration, and special areas), the natural and social sciences, and the humanities. Alternative approaches to traditional thesis methods are also encouraged within the program.

ADMISSION REQUIREMENTS, M.A.E.

Undergraduate Preparation: In addition to the School of the Arts admission requirements, applicants in art education must have completed a minimum of 36 semester hour credits in studio art at the undergraduate level. It is desirable for applicants to have had at least two years of teaching experience prior to beginning graduate studies.

Portfolio: Applicants must submit evidence of creative or professional involvement in the format of their choice. Included should be material such as slides of representative work, description of professional activities, articles published, curriculum and program material developed, and other documentation of activities with artists, teachers, and children.

DEGREE REQUIREMENTS, M.A.E.

Program Pattern

	<i>Credits</i>
Art Education Electives	12
Approved Electives	15
Issues and Methods	3
Thesis Requirement or Additional Course Work in Art Education	6
	36

Thesis or Project Option

A thesis or project problem may develop from graduate course work or professional involvement. Projects are those endeavors of thesis proportion which do not fit the tradi-

tional thesis format. A thesis or project may be explored by descriptive research, historical research, empirical/statistical research, design of learning packages, philosophical study, curriculum development, or action research.

Nonthesis Option

In lieu of the thesis, students may elect to complete six credit hours of graduate course work in the Department of Art Education. The selection of these six credits is subject to the approval of the student's advisor. In addition, the student must successfully pass a written and oral examination at the conclusion of all course work. The examination will pertain to the course work, to contemporary issues in the field, and to the student's particular area of expertise.

GRADUATE COURSES IN ART EDUCATION (AEN)

501-502 Concepts in Art Education. Continuous course; 1 seminar and 4 studio hours. 3-3 credits. A sequence of studies organized around six major components: communications, expressive media, conceptual expression, teaching strategies, teacher-affective attributes, and self-managing abilities.

508 Two-Dimensional Art Experiences. Semester course; 2 seminar and 3 studio hours. 3 credits. The course explores the media, techniques, and concepts of drawing, painting, and printmaking. Not offered for credit to art majors.

509 Three-Dimensional Art Experiences. Semester course; 2 seminar and 3 studio hours. 3 credits. Exploration of sculptural concepts with three-dimensional materials such as wood, metal, clay, fibre, plaster, plastic, and glass. Not offered for credit to art majors.

520 Teaching Concepts Through the Arts. Semester course; 1 lecture, 1 seminar, and 3 studio hours. 3 credits. Students will investigate and compare traditional and contemporary patterns of expression; develop experiential techniques for teaching concepts; and participate in a series of activities which reveal relationships among the arts and other subject areas. Seminars will include guests from the visual, performing, and literary arts. Open to all graduate students.

591 Topics in Art Education. Semester course; variable credits from 1-3. May be repeated for a maximum of 9 credits. The course will explore selected topics of current interests or needs relative to art education. See Schedule of Classes for specific topic to be offered each semester.

600 Seminar: Problems in Art Education. Semester course; 3-6 lecture hours. 3-6 credits. Oral and written reports upon problems encountered by members of the seminar in their own art teaching. Group discussion of reports with the instructor as moderator.

601 Art for Elementary Classroom Teachers. Semester course; 2 lecture and 2 studio hours. 3 credits. The nature of art and its function in the lives of individuals and society will be explored in addition to an emphasis upon relevant objectives, materials, and approaches in guiding the artistic expression of children at the elementary school level. Not offered for credit to art majors.

611, 612 Art Education Theory. Semester course; 3 lecture hours. 3, 3 credits. Review and analysis of significant writings and research in art education and the assessment of its pragmatic import.

650 Art for the Exceptional Learner. Semester course; 2 lecture and 3 laboratory hours. 3 credits. A study of exceptionality, including handicapped, aged, gifted, and talented or other exceptional individuals, in terms of participation in and appreciation of the visual arts. Course to include practicum and field experiences.

652 Art Supervision and Administration. Semester course; 3 lecture hours. 3 credits. Exploration of the duties and responsibilities of the public school art supervisor and administrative positions in art education within various organizations or institutions.

665 Curriculum Development and Evaluation. Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 6 credits. A review of curriculum development including: needs assessment, determination of goals and objectives, curriculum writing, evaluation, and feedback processes. A variety of theoretical approaches in the visual arts are studied and curriculum models are developed and analyzed within the class.

670 Media in Art Education. Semester course; 3 lecture hours. 3 credits. Examining the influence and implications of technology in art education through participation in creative learning processes.

680 Teaching Laboratory. Semester course; 3 lecture hours. 3 credits. Observations and experimental teaching experiences with children in art. Group discussions and evaluation of ideas, objectives, and methods.

690 Issues and Methods of Research in Art Education. Semester course; 3 lecture hours. 3 credits. Readings and discussions of studies in art education and related research emphasizing possibilities for implementation by art teachers. Methods of research in the field will be reviewed and sample research proposals will be developed by the students.

Department of Art History

FACULTY

Bonds, Maurice *Professor Emeritus* M.A., Columbia University.
 Flint, Richard C. *Associate Professor* Ph.D., Indiana University; Nineteenth Century, American.
 Gairola, C. Krishna *Associate Professor* Ph.D., London University, D.E.L., Ecole du Louvre; Oriental.
 Jones, Sharon Gallagher *Associate Professor* Ph.D., New York University; Medieval.
 Katz, M. Barry *Professor and Chairman* Ph.D., Syracuse University; Renaissance, Nineteenth Century.

Koplin, Bruce M. *Associate Professor* M.F.A., Virginia Commonwealth University; museology, American.

Mooz, R. Peter *Visiting Professor* Ph.D., University of Pennsylvania; museology, American.

Pace, Laurence A. *Associate Professor* M.A. and Certificate of Advanced Study in Conservation, State University of New York, Cooperstown Graduate Program, Cooperstown, New York; conservation.

Perry, Regenia A. *Professor* Ph.D., Western Reserve University; American, African, architectural history.

Phillips, James E. *Assistant Professor* Ph.D., University of Texas; Ancient, Classical.

Risatti, Howard *Assistant Professor* Ph.D., University of Illinois; Modern, Contemporary.

The department offers a broad-based education in the humanistic discipline of art history. A general comprehensive knowledge of the field is stressed on the master's level, as well as the opportunity to develop professional skills of research and writing. Doctoral studies are more specialized with an increased emphasis on individual scholarship. Throughout, expertise is developed in criticism and the historiographic methods, such as connoisseurship, stylistic analysis, and iconography. Individual research is encouraged through seminars, independent projects, and ultimately, the writing of a thesis and dissertation.

The Department of Art History Department also offers a curriculum in museum studies, one which takes particular advantage of the rich cultural facilities of Virginia's urban environment. The program is run in coordination with numerous local and regional museums, stressing on-site instruction and internships. An opportunity is offered for the study of the conservation of art as well as curatorial and administrative aspects.

Overseas studies are available through university-sponsored programs abroad in Europe and Asia.

Graduate assistantships and fellowships are available to full-time students.

M.A., MUSEUM STUDIES

The two-year program in museum studies stresses those attitudes and skills necessary to accomplish the major goals of any professional museum operation: to collect, to preserve, to exhibit, and to interpret the art and artifacts of the past and present within an extended curriculum and professional museum environment. The course of study also includes an internship for academic

credit under the direct supervision and professional guidance of individuals in the field.

The curriculum will provide a broad educational background in the field as well as a more particularized experience in those areas in which the student desires to develop expertise. These specialized areas include: museum theory and practice, curatorial methods and conservation, registration methods, exhibit design, and education programs.

Admission Requirements

In addition to the School of the Arts admission requirements, applicants should have completed a minimum of 6 credits in the survey of western art, 6 credits of period studies, 3 credits in conservation, and some undergraduate work in the humanities. Any applicant whose training is less extensive may be provisionally admitted and subsequently may gain full graduate status upon completion of the deficiency.

Degree Requirements, M.A.

	<i>Credits</i>
Museum Studies	15
Museum Internship	3
Conservation	3
Art History (period courses)	12
Art Historiography and Methodology	3
Aesthetics	3
Elective	3
Museum Project or Thesis	6
	48

Museum studies students will take a diagnostic examination upon entering the program and an appropriate comprehensive examination sometime toward the end of course work. They will also need to demonstrate proficiency in French or German.

An internship at one of the cooperating local or regional museums is a degree requirement of particular importance, enabling students to apply their knowledge and to develop a personal awareness of effective museum exhibition procedures. As a culmination to the course of study, students may opt to plan and mount a major exhibition on campus or at a museum in lieu of a written thesis, with the approval of the departmental Graduate Committee.

M.A., HISTORICAL

Graduate studies leading to the M.A. and Ph.D. degrees in art history are intended to train students to become creative and accomplished teachers and scholars in the discipline of art history. The Master of Arts program is designed to provide a comprehensive knowledge of the major areas and historical periods of art, as well as the various research and methodological skills requisite to the field.

The requirements listed below are in conjunction with School of the Arts graduate admission and degree requirements.

M.A. Admission Requirements

In addition to the School of the Arts requirements, applicants should have completed a minimum of 21 undergraduate semester hours in art history with additional work in relevant humanities and social science courses such as English, philosophy, foreign language, and history. Students whose undergraduate training is less extensive may be provisionally admitted and subsequently attain full graduate status.

M.A. Degree Requirements

A total of 30 credits in course work and thesis.

	<i>Credits</i>
Art History	21
Historiography and Methodology	3
Thesis	6
	30

At least 6 of the 21 art history credits must be taken in seminar classes.

Upon entering the program all students will immediately be given a departmental diagnostic examination which will be used for the purpose of determining the relative strengths and weaknesses of their educational backgrounds. This test will have no grade significance, but will be used solely as an aid in determining a course of study.

Degree candidates must have a reading knowledge of French or German. The requirement may be fulfilled after admission but prior to taking the comprehensive examination. The demonstration of proficiency is accomplished through the taking of the appropriate foreign language test of the Educational Testing Service.

Students must also demonstrate general

programmatic competence by passing a comprehensive examination, taken sometime toward the end of course work (although it may be requested at any time after the completion of 18 credit hours), and following the successful demonstration of foreign language proficiency.

The master's program culminates with a thesis, written under the direction of a departmental adviser and a thesis committee.

For more complete information and details on these procedures, please contact the Department of Art History.

PH.D. IN ART HISTORY

The department plans to initiate a Ph.D. in art history program beginning fall, 1984, subject to final approval of the State Council of Higher Education for Virginia. A description of the program and specific admission and degree requirements are available from the chairman of the Department of Art History or the director of graduate studies, School of the Arts.

GRADUATE COURSES IN ART HISTORY (ARH)

504 Advanced Studies in Prehistoric and Ancient Art. Semester course; 3 lecture hours. 3 credits. May be repeated to a maximum of 12 credits. An advanced, detailed study of a selected aspect of artistic development in prehistoric culture or ancient Mesopotamia, Iran, Anatolia, or Egypt. See Schedule of Classes for specific topic to be offered each semester.

505 Advanced Studies in Greek, Etruscan, and Roman Art. Semester course; 3 lecture hours. 3 credits. May be repeated to a maximum of 12 credits. An advanced, detailed study of a selected aspect of the art and ideas of the classical Greek and Roman cultures, including the Etruscans. See Schedule of Classes for specific topic to be offered each semester.

514 Advanced Studies in Medieval Art and Architecture. Semester course; 3 lecture hours. 3 credits. May be repeated to a maximum of 12 credits. An advanced, detailed study of a selected aspect of development in the art and ideas of Byzantine, Germanic, Romanesque, or the Gothic period. See Schedule of Classes for specific topic to be offered each semester.

519 Advanced Studies in Renaissance Art and Architecture. Semester course; 3 lecture hours. 3 credits. May be repeated to a maximum of 12 credits. An advanced, detailed study of a selected aspect of the development of the art and ideas of the Proto-Renaissance, early Renaissance, or high Renaissance. See Schedule of Classes for specific topic to be offered each semester.

524 Advanced Studies in Baroque and Eighteenth Century Art and Architecture. Semester course; 3 lecture hours. 3 credits. May be repeated to a maximum of 12 credits. An advanced, detailed study of a selected aspect of the development of the art and ideas of England, France, the low countries, Italy, Spain, Germany, and Austria during the Baroque period and eighteenth century. See Schedule of Classes for specific topic to be offered each semester.

529 Advanced Studies in Nineteenth Century Art and Architecture. Semester course; 3 lecture hours. 3 credits. May be repeated to a maximum of 12 credits. An advanced, detailed study of a selected aspect of the development of the art and ideas of the nineteenth century including neoclassicism, romanticism, realism, impressionism, and decadent art. See Schedule of Classes for specific topic to be offered each semester.

539 Advanced Studies in Twentieth Century Art and Architecture. Semester course; 3 lecture hours. 3 credits. May be repeated to a maximum of 12 credits. An advanced, detailed study of a selected aspect of the development of the art and ideas of the twentieth century. See Schedule of Classes for specific topic to be offered each semester.

542 Advanced Studies in the Architecture of Richmond. Semester course; 3 lecture hours. 3 credits. May be repeated to a maximum of 6 credits. An advanced, detailed study of a selected aspect of the development of the architecture of the city of Richmond. See Schedule of Classes for specific topic to be offered each semester.

544 Advanced Studies in American Art. Semester course; 3 lecture hours. 3 credits. May be repeated to a maximum of 12 credits. An advanced, detailed study of a selected aspect of the development of the art and ideas of America. See Schedule of Classes for specific topic to be offered each semester.

549 Advanced Studies in Asian Art. Semester course; 3 lecture hours. 3 credits. May be repeated to a maximum of 12 credits. An advanced, detailed study of a selected aspect of the development of the art and ideas of India, China, Japan, or Southeast Asia. See Schedule of Classes for specific topic to be offered each semester.

552 Art of Central, Eastern, and Southern Africa. Semester course; 3 lecture hours. 3 credits. A study of the major art-producing tribes and areas of Central Africa, including the Cameroon, Gabon, and Zaire; East Africa, including Kenya, Tanzania, and Mozambique; and Southern Africa, Bushman art, prehistoric cave paintings, and rock engravings.

554 Advanced Studies in African and Oceanic Art. Semester course; 3 lecture hours. 3 credits. May be repeated to a maximum of 6 credits. An advanced, detailed study of a selected aspect of the development of the art and ideas of African and oceanic cultures. See Schedule of Classes for specific topic to be offered each semester.

555 Advanced Studies in Aesthetics and Art Theory. Semester course; 3 lecture hours. 3 credits. An advanced, detailed investigation of aesthetic theories and concepts in art.

556 Advanced Studies in Ideas and Criticism in Art. Semester course; 3 lecture hours. 3 credits. An ad-

vanced, detailed examination of specific concepts in the literature of art criticism with particular emphasis on the principle writings of leading American critics.

564 Advanced Studies in Conservation. Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. An advanced, in-depth examination of selected topics in conservation. See Schedule of Classes for specific topic to be offered each semester.

569 Advanced Studies in Museum Methods. Semester course; 3 lecture hours. 3 credits. May be repeated to a maximum of 9 credits. Advanced instruction in the major aspects of museum administration. Lectures by museum personnel and workshops in a variety of museums. A major research project is required.

571 Advanced Studies in Film Theory. Semester course; 3 lecture hours; 3 credits. Advanced, detailed study of the theories and criticism of film, dealing with medium, form, function, and psychology.

574 Advanced Studies in Film. Semester course; 3 lecture hours. 3 credits. May be repeated to a maximum of 12 credits. An advanced, detailed examination of selected topics in the history of film. See Schedule of Classes for specific topic to be offered each semester.

575 Advanced Studies in the History of Photography. Semester course; 3 lecture hours. 3 credits. May be repeated to a maximum of 12 credit hours. An advanced, detailed examination of selected topics in the history of photography. See Schedule of Classes for specific topic to be offered each semester.

580 Registration Procedures for Museums. Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. A study of the standard registration procedures and the current vocabulary employed by the profession. Professional ethics will be stressed to enable the student to become more fully aware of the importance within the museum system.

581 Museum Exhibitions. Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. The study of exhibitions for museums including design, fabrication, lighting, brochures, invitations, and publications.

582 Educational Program and Public Relations for Museums. Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. A study of programming for an art center/museum, including organization of permanent displays, special exhibitions, lectures, docent programs for children and adults, and traveling exhibition services. Special emphasis will be placed on the use of audiovisual materials and techniques in the exhibitions and interpretation programs, as well as the techniques of public information, including press releases, use of television, radio, newspapers, and scholarly publications.

583 Curatorship and Connoisseurship. Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. An examination of the curator's relationship and responsibilities to the museum system, research methods, methods of acquisition, organization of museum reference library (including slides and other audio-visual materials), exhibition catalogues, clip-pings, and file and computer retrieval systems.

584 Museum Administration. Semester course; 3 lecture hours. 3 credits. Prerequisite: ARH 464, 465 and/or permission of instructor. A study of museum organization, including staff organization and relationship of director to board; building and grounds; heating and humidity control; guarding and fire control; special installations and shops; membership programs; museum finances for operation and acquisition funds; grants; promotion; development; and overall responsibility to the community and profession.

590 Art Historiography and Methodology. Semester course; 3 lecture hours. 3 credits. Basic methodology for beginning art history graduate students. An examination of the traditional research methods of the art historical discipline, geared to familiarize students with standards in research and scholarship.

593 Advanced Museum Internship. Semester course; 9 to 18 studio hours. 3 to 6 credits. Course may be repeated to a maximum of 12 credits. Prerequisites: ARH 464 or 465 and permission of director of museum studies and chairman of Art History Department. Advanced field work in a local, regional, or national museum.

660 Advanced Studies in Curatorial Care of Collections. Semester course; 3 lecture hours. 3 credits. Prerequisite: ARH 360 or its equivalent. Advanced, detailed investigation of the examination and deterioration of art works. Designed to be of special interest to the future museum professional. Includes practical instruction in diagnosis, documentation, and emergency treatment.

699 Museum Project. Semester course; 3-6 credits. Prerequisite: permission of departmental graduate committee and director of museum training program. The planning, mounting, and documentation of a major exhibition on campus or in a local/regional museum.

752 Art of Nigeria. Semester course; 3 lecture hours. 3 credits. A study of the culture and traditional art forms of Nigeria, from ca. 500 BC to present, including architecture, sculptural works in wood, stone, ivory and metal, royal attire, jewelry, and weaponry. Special emphasis will be placed upon the art of the Yoruba and Benin bronzes.

759 Seminar in Aesthetics, Theory, and Criticism of Art. Semester course; 3 lecture hours. 3 credits. May be repeated to a maximum of 6 credits. An advanced, detailed study of selected topics of aesthetics, art theory and criticism in a seminar situation. See Schedule of Classes for specific topic to be offered each semester.

780 Aspects in Christian Iconography. Semester course; 3 lecture hours. 3 credits. Seminar: the study of meaning in the visual arts of Europe from the Middle Ages to the Neo-Classical period. Students will analyze special themes of a Christian or classical derivation and study major cultural shifts within a broader historical perspective.

781 Aspects of Buddhist Iconography. Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. Seminar: research into the origins and expansion of Buddhist art in Asia.

782 Aspects of Hindu Iconography. Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of in-

structor. Seminar: research into the origins and expansion of Brahmanical Hindu art in Asia.

789 Problems in Advanced Art History. Semester course; 3 lecture hours. 3 credits. May be repeated. Seminar for scholarly research and discussion of specific issues, i.e., in prehistoric art, ancient art, classical art, medieval art, Renaissance art, Baroque art, nineteenth century art, modern art, contemporary art, American art, Asian art, museum management, film and photography.

797 Directed Research Project. Semester course; variable credit; maximum 3 credits per semester. Prerequisite: permission of instructor and department chairman. Advanced individual work on subject to be formulated by student and instructor.

Department of Crafts

FACULTY

Eastman, Allan A. *Professor Emeritus* B.S., Vesper George School of Art.
 Hammersley, William S. *Associate Professor* M.F.A., University of Wisconsin, Madison; woodworking, furniture design.
 Hawthorne, John *Assistant Professor* M.F.A. Cranbrook Academy of Art; fabric design, textiles.
 Ipsen, Kent F. *Professor* M.F.A., University of Wisconsin, Madison; glassworking.
 Iverson, Susan *Assistant Professor* M.F.A., Tyler School of Art; tapestry, textiles.
 Meyer, C. James *Assistant Professor* M.F.A, State University College, New Paltz; metalsmithing, jewelry.
 Ripley, Curtis *Assistant Professor* M.F.A. University of Wisconsin, Madison; ceramics.
 Silliman, Christopher *Assistant Professor* M.F.A., Alfred University; ceramics.
 Thompson, Nancy K., *Associate Professor and Chairman* M.F.A., Indiana University; jewelry.
 Winebrenner, Daniel K. *Associate Professor* M.F.A., Rochester Institute of Technology; design, multimedia.

The Department of Crafts offers a program of study leading to the Master of Fine Arts degree in five disciplines: ceramics, furniture design, glassworking, jewelry or metalworking, textiles.

Within the studio concentration, emphasis is placed on self-motivation, individual investigation, and the development of professional attitudes and skills. Students are expected to demonstrate a serious commitment to their work and to develop mature ideas and forms of expression.

The program also offers graduate students opportunities for enhancing their major fields of concentration. Twenty elective credits are available for this purpose.

ADMISSION REQUIREMENTS M.F.A.

Undergraduate Preparation: In addition to the School of the Arts admission requirements, applicants in crafts must have completed a minimum of 36 semester hour credits in studio art at the undergraduate level. Students admitted to the graduate program are expected to have achieved a high level of competency in one of the departmental disciplines.

Portfolio: Applicants must submit a minimum of 20 slides of recent representative work, four of which must be drawings, the remainder of which should be in the field of application.

DEGREE REQUIREMENTS, M.F.A.

Program Pattern

	<i>Credits</i>
Studio Major	24
Approved Electives	20
Graduate Seminar	4
	48

The candidate for the M.F.A. degree in crafts must present a cumulative show of work near the end of the program of study. The show must have the approval of a simple majority of the graduate faculty for the degree to be awarded.

GRADUATE COURSES IN CRAFTS (CRA)

547 Ceramic Technology. Semester course; 3 lecture hours. 3 credits. Study of ceramic materials through calculation and experimentation.

591 Special Topics and Practicum. Semester course; 1-3 credits. May be repeated. Prerequisite: permission of instructor. A topical seminar/workshop offered in a variety of craft subjects or issues not included in the regular curriculum. See Schedule of Classes for particular topic or topics to be covered each semester.

601, 602, 603, 604 Metal or Jewelry. Semester courses; 3, 6, or 9 credits. Hours to be arranged. Personal investigation of materials, processes, and attitudes relating to the creative production of metal and/or jewelry forms.

621, 622, 623, 624 Furniture Design. Semester courses; 3, 6, or 9 credits. Hours to be arranged. Design, research, and experimentation in wood and varied materials, relating to a body of work demonstrating the student's mastery of material.

641, 642, 643, 644 Ceramics. Semester courses; 3, 6, or 9 credits. Hours to be arranged. Problems in the design and production of functional and non-functional ceramic objects as well as study of experimentation in ceramic technology and kiln design.

651, 652, 653, 654 Glassworking. Semester courses; 2 lecture, 3 or 12 studio hours. 3 or 6 credits. Prerequisite: permission of instructor. Investigation of and experimentation with the ideas, material, and processes relative to the production of glass forms.

661, 662, 663, 664 Textiles. Semester courses; 3, 6, or 9 credits per semester. Hours to be arranged. Work in contemporary and traditional textile techniques.

690 Graduate Seminar. Semester courses; 1 lecture hour. 1 credit. May be repeated. A weekly series of topical discussions dealing with contemporary issues in the arts as they affect the craftsman. Faculty, students, and, as appropriate, visiting lecturers will participate.

The Master of Fine Arts in Design

INTERIOR ENVIRONMENTS PHOTOGRAPHY/FILM VISUAL COMMUNICATIONS

GENERAL PROGRAM DESCRIPTION

The purpose of this advanced degree program in design is to prepare the individual designer to assume a leadership role in a complex and expanding profession. The course work, internship experience, and research which constitute the program will enable the designer to better solve visual and spatial problems and to function more effectively as an administrator, planner, and educator.

The program offers the graduate student the opportunity to use appropriate courses and resources from schools within the university, to participate in internship and research with various agencies and organizations concerned with programs of design, and to view design as an interdisciplinary profession with an essential contribution to make toward the solution of the problems of today.

There is an emphasis placed upon design education because of the need for better design programs and more qualified faculty to staff schools, especially community colleges. The program also recognizes the need for better trained designers and design educators from minority groups.

CHARACTERISTICS OF THE PROGRAM

The Master of Fine Arts in design is an advanced interdisciplinary program in the

study of design which utilizes knowledge and human potential in alternative ways to define problems and create change.

Graduate students not only have the opportunity to work within a design field such as visual communications, interior environments, and photography/film, but also have the opportunity to develop competencies across fields and to engage in research and inquiry of a social or environmental nature to create new visual forms and communicative content in a rapidly changing society.

Internship and Field Experiences

The graduate program places an emphasis upon field experiences as an interface between the theoretical and the practical. Within a professional school of the arts in an urban university there are excellent opportunities for appropriate graduate field experiences. They include

1. Formal arrangements with state agencies, industries, foundations, and community organizations which would enable the graduate designer to function as a member of a project team or task force.
2. Service to various organizations, offered as the need arises, possibly with the student working on a specific problem or project.
3. Research internships developed with the university on school-supported or outside-funded projects, especially those which concern social problems, health care, and institutional environments.

PROGRAM REQUIREMENTS

Thesis

Depending upon the discipline involved, the thesis may be essentially scholarly or creative in content and form. In either instance, the written thesis or the thesis statement (when the thesis involves creative work or performance) is done in a form that can be retained by the university.

EXAMPLES OF THESES

Interior Environments

An investigation in a scholarly area or specific research and documentation of a technical or creative project.

Photography/Film

An exhibition of photographs appropriately documented; a film appropriately documented; specific research problem of a technical or creative nature; and documentation of research or project during internship.

Visual Communications

An exhibition of a visual communications project appropriately documented; specific research problem of a technical or creative nature; and documentation of research or project during internship.

COURSES FOR M.F.A. IN DESIGN (DES)

Courses Common to All Subspecialties

601 Interdisciplinary Design Seminar. Semester course; 3 lecture hours. 3 credits. An introductory seminar for beginning graduate students across the three subspecialty areas which examines the mission of the contemporary designer and the technological, psychological, and aesthetic resources. Professional designers, educators from other fields on campus, and resource people from business and industry will participate.

602 Advanced Design Seminar. Semester course; 3 lecture hours. 3 credits. May be repeated. An advanced seminar in which students and faculty from the three subspecialty areas meet and discuss the professional and conceptual aspects of interdisciplinary design activity. Students will draw upon past knowledge and current investigations.

603 Design and Visual Communication Education. Semester course; 3 lecture hours. 3 credits. This course will explore the philosophical, informational, and technical aspects of design education.

School of the Arts and University Courses

The following courses common to all graduate programs in the School of the Arts are available to M.F.A. students in design who desire to engage in research supervised by qualified professors within the school and other academic divisions within the university.

ARTS 509, 510; 609, 610 Individual Projects/Field Work

ARTS 705, 706 Research in the Arts

ARTS 799, Thesis

There are a variety of graduate courses offered within the School of the Arts which can be utilized as electives by the student in this degree program. Some examples are

ARH 639 Advanced Studies in Twentieth Century Art and Architecture

ARH 674 Advanced Studies in Film

PAP 605-606 Graduate Painting

PAP 615-616 Graduate Printmaking

PAP 621-622 Graduate Drawing

SCU 500, 600 Graduate Sculpture

THE 503, 504 History of Dramatic Literature

THE 526, 527 Playwriting

Virginia Commonwealth University offers a wealth of graduate courses which can, as electives, support the educational process and personal development of our graduate students.

Department of Interior Design

FACULTY

Chandler, D. L. *Assistant Professor* M.S., Massachusetts Institute of Technology; graphic presentation skills, public relations, professional awareness.

Field, Jerry J. *Professor* B.S., Certificate in I.D., Virginia Commonwealth University; Diploma, Parsons School of Design; history of interior design and architecture, period restoration.

Gunter, Ben D. *Professor and Chairman* M.Ed., University of Virginia; interior design education, business and commercial design.

Long, James T. *Assistant Professor* M.Arch., University of Kansas; architecture as media, professional practice.

Marlow, Craig H. *Assistant Professor* M.F.A., Louisiana Tech University; graphic communication, design.

Philbrick, Pamela M. *Assistant Professor* M.A., University of Michigan; psychology of interior space.

Schroeder, Johanna E. *Professor* D.A., Federal Institute of Technology, Zurich; Gerrit T. Rietveld: De Stijl architecture, furniture.

Yung, Ringo *Associate Professor* M.F.A., University of Kansas; new trends in Chinese architecture.

The graduate program in interior environments will provide individuals with design backgrounds the opportunity to expand their knowledge of intellectual, creative, cultural, and philosophical attitudes toward design.

The depth of the program will stimulate professional excellence in a specific area of interior environments and will allow interaction with disciplines in the School of the Arts and the university.

The department offers accelerated undergraduate preparation for those interested individuals with nondesign

backgrounds. This is an opportunity to gain the skills and design experiences necessary to qualify for admission to the graduate degree program.

SPECIFIC ADMISSION REQUIREMENTS

Undergraduate Preparation: A minimum of 36 semester credits in studio art at the undergraduate level; additional semester credits are required in related courses such as architecture, business, environmental support systems, art/architectural history, and environmental psychology.

Portfolio: a minimum of ten recent designs which exemplify the ability to draft, sketch, render, and letter, as well as to solve interior and/or exterior design problems. Attending research data and slides of prototypes and work completed should be included if possible.

DEGREE REQUIREMENTS

A minimum of 48 credits are required within prescribed courses. A thesis is required and is undertaken and developed in the context of the course Art 799. The thesis may be essentially scholarly or creative in content and form. In either instance, the written thesis or thesis statement (when the thesis involves creative work) is done in a form that can be retained by the university.

COURSE REQUIREMENTS

	<i>Credits</i>
Graduate Design Core	24
Graduate Seminars	12
(Interior Environments or Design)	
Approved Electives	9
Thesis	3
	48

Internship may be substituted for Graduate Design Core or for Approved Electives.

GRADUATE COURSES IN INTERIOR ENVIRONMENTS (IDE)

601 Graduate Design Core. Semester course; 6, 12 studio hours. 3, 6 credits. May be repeated. Designing in specialized areas of interior environments.

621 Interior Environments Seminar. Semester course; 3 lecture hours. 3 credits. May be repeated. A seminar which examines, on a rotating basis, one of the following four topics each semester: environmental psychology, concept development and theory, research methods, and future trends.

693 Field Work, Internship. Semester course; 6, 12, 18 studio hours. 3, 6, 9 credits. May be repeated. Prerequisite: approval of advisor. Professional experience in the cooperative solution of design problems in interior environments which relate theory to practice. Formal arrangements must be made with state agencies, industries, and community organizations and individuals.

Department of Photography and Film

FACULTY

Bremer, David *Assistant Professor* M.A., Ohio University; still photography.
 Dixon, Clifton *Associate Professor* M.A., University of Maryland; cinematography.
 Heroy, John *Associate Professor* M.F.A., State University of New York at Buffalo; still photography.
 Lensen-Tomasson, Nancy *Assistant Professor* M.F.A., University of Mexico; still photography, color.
 Nan, George *Professor and Chairman* M.S., Illinois Institute of Technology; still photography, color.
 Quarterman, Dale *Associate Professor* M.S., Illinois Institute of Technology; still photography.
 Strommer, Joan *Assistant Professor* M.F.A., University of Minnesota; cinematography.

The Department of Photography and Film seeks through its graduate program to advance the highest standards of the media of photography and film by encouraging the creative and professional growth of both its students and faculty. The goal is to provide a forum for the development and exchange of visual ideas and to encourage its members to translate these ideas through the medium with a high degree of sensitivity and proficiency.

The program is meant to be flexible. Participants in the program may choose to emphasize their search for personal expression or they may work in the Design Center with an emphasis on the application of their art to design problems. The program culminates with the presentation of a body of work, either visual or written and visual, that coherently expresses some aspect of the medium.

The successful candidate for the M.F.A. degree will be adequately prepared to continue to function as a working photographer and to begin a career in teaching or in photographic design.

ADMISSION REQUIREMENTS

Undergraduate Preparation: The 36 semester hour credits in studio art at the

undergraduate level must include a minimum of nine semester hour credits in photography or cinematography.

Portfolio: Photography—A minimum of 20 recent photographs. Cinematography—A minimum of three recent films for which the applicant has had a primary responsibility in production. A video tape can be substituted for one of the films.

DEGREE REQUIREMENTS

The advanced study of photography and film is both broad and varied. Therefore, the program's requirements are flexible and determined by the needs of each student on an individual basis. There are however, a few definite requirements. Each student must have on completion of the program a knowledge of contemporary art history and design, a more in-depth knowledge of the history of his discipline, be it still photography or film, and an understanding of the critical dialogue that is connected with his medium. The extent to which courses are suggested for students to meet these requirements depends on their background.

TYPICAL COURSE OF STUDY

	<i>Credits</i>
Studio and/or Research (in major)	15
Graduate Seminar	12
Approved Electives	9
History of Photography or Film	6
Internship	3
Thesis	3
	48

GRADUATE COURSES IN PHOTOGRAPHY/FILM (PTY)

500 Photographic Studio and Seminar. Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisite: permission of instructor. Experimentation in the studio with both silver and nonsilver processes for creating the photographic image, leading to producing a cohesive body of work. The seminar examines the technical and aesthetic components of these processes and the language and theories of photographic criticism.

601 Photographic Studio. Semester course; 6, 12 studio hours. 3, 6 credits. May be repeated. Nonmajors by permission of instructor. Student will work on specific problems relating to the areas of their major interests. Options will be available in black and white photography, color photography, and motion picture photography.

621 Research in Photography and Film. Semester course; 6, 12 studio hours. 3, 6 credits. May be repeated. Nonmajors by permission of instructor. Students will engage in appropriate theoretical, experimental, or historical research in a specific area.

690 Seminar in Photography and Film. Semester course; 3 lecture hours. 3 credits. An examination of contemporary issues and developments in photography and film. Students will have a chance to discuss their work and the work of others. May be repeated.

693 Field Work, Internship. Semester course; 6, 12 studio hours. 3, 6 credits. May be repeated. Professional field experience in the theoretical and practical applications of photography and/or film through cooperative organizations. Formal arrangements will be made with state agencies, industries, community organizations, and professionals in the field.

Department of Communication Arts and Design

FACULTY

Apgar, Nicolas *Professor* M.F.A., Syracuse University; drawing, illustration.

Bevilaqua, William *Professor* M.F.A., University of North Carolina; drawing, visual thinking.

Callan, Mallory *Assistant Professor* B.F.A., Kansas Art Institute; illustration, drawing, design history.

Carlyon, Richard *Professor* M.F.A., Richmond Professional Institute; drawing, design, art history.

Carter, Robert *Assistant Professor* M.F.A., University of Illinois; graphics, computer graphic design, semiology.

Davis, Meredith *Associate Professor* M.F.A., Cranbrook Academy of Art; graphics, educational design, design methods.

Day, Ben *Associate Professor* M.F.A., Louisiana Tech University; graphic design, typography.

De Mao, John *Assistant Professor* M.P.D., North Carolina State University; design theory and methodology.

Meganck, Robert *Associate Professor* M.F.A., Cranbrook Academy of Art; graphic design, typography, illustration.

Meggs, Philip B. *Associate Professor and Chairman* M.F.A., Virginia Commonwealth University; graphic design and design history.

Ouchi, Akira *Assistant Professor* M.S., Illinois Institute of Technology; graphic design, typography.

Scalin, Charles *Associate Professor* M.F.A., Pratt Institute; illustration, graphic design.

Sorensen, Vibeke *Assistant Professor* M.A.H., State University of New York at Buffalo; media arts, computer graphics.

The objective of this program is to develop the philosophy and personal direction of each student while focusing his/her resources for inventive visual communication toward man and his environment.

Students working in the Graduate Center for Visual Communications concentrate on the philosophical, social and aesthetic relationships of visual problem solving, the development of prototypes for socially viable visual communications, and the in-

vention of visual form. Although the program anticipates refinements of students' technical abilities, education in this program does not emphasize technical instruction.

SPECIFIC ADMISSION REQUIREMENTS

Undergraduate Preparation: The 36 semester credits in studio art must include a minimum of 20 semester credits in visual communications.

Portfolio: A minimum of 15 examples of visual communications which demonstrate visual organization, creative problem-solving ability, and potential for research and growth.

TYPICAL PROGRAM PATTERN

First Semester	Credits
Interdisciplinary Seminar.....	3
Visual Communications Workshop.....	6
Elective: Urban Studies.....	3
	12
Second Semester	
Visual Communications Workshop.....	6
Design and Visual Communication Education....	3
Elective: Photography.....	3
	12
Third Semester	
Visual Communications Workshop.....	6
Visual Communications Seminar.....	3
Elective: Photography.....	3
	12
Fourth Semester	
Advanced Design Seminar.....	3
Visual Communications Workshop.....	6
Documentation (Thesis).....	3
	12
	48

Possible thesis title: "A Proposed Signage Code for Countries in Transition from a Rural to an Urban Character."

GRADUATE COURSES IN VISUAL COMMUNICATIONS (CDE)

611 Visual Communications Workshop. Semester course; 6, 12, 18 studio hours. 3, 6, 9 credits. May be repeated. A professionally oriented class. Selected projects will be in areas concerned with theoretical research of an advanced nature or involvement with institutions offering opportunities for designing on an advanced level.

621 Visual Communications Seminar. Semester course; 3 lecture hours. 3 credits. May be repeated. Faculty, students, designers from industry, and authorities from appropriate disciplines will examine aesthetic and social

areas of concern to the designer and specific projects developed in the Visual Communications Workshop.

Department of Music

FACULTY

- Batty, L. Wayne *Professor* M.M., Chicago Musical College; voice, choral music.
- Bilyeu, Landon *Associate Professor* M.M., University of Tulsa; piano.
- Blank, Allan *Associate Professor* M.A., University of Minnesota; composition, theory.
- Carle, Harold W. *Assistant Professor* M.M., Columbia University; theory, on educational leave, 1983-1984.
- Carrier, Loran *Associate Professor* Ph.D., University of Maryland; electronic music, composition.
- Cherry, Milton, *Professor Emeritus* M.M., Chicago Musical College.
- Donnell, Cynthia S. *Assistant Professor* M.M., University of North Carolina, Greensboro; voice, vocal literature.
- Jarrett, Jack *Professor* D.M., Indiana University; conducting.
- Koehler, Richard *Professor and Chairman* Ph.D., University of Oregon; choral conducting.
- Kugler, Roger *Assistant Professor and Assistant Chairman* D.M.A., University of Oregon; music education.
- Lohuis, Ardyth *Associate Professor* D.M.A., College-Conservatory of Music, University of Cincinnati; organ, church music.
- Marrison, Melissa Wuslich *Associate Professor* M.M., College-Conservatory of Music, University of Cincinnati; piano.
- Murray, Robert P. *Associate Professor* D.Mus., Indiana University; violin, viola.
- Newlin, Dika *Professor* Ph.D., Columbia University; history, literature.
- Pfeifer, Carl *Professor* M.M., University of Miami; piano.
- Schenker, Sandra L. *Assistant Professor* Ph.D., University of Connecticut; music education.
- Smetana, Frantisek *Professor* Diploma, Ecole Normale de Musique; cello.
- Tennant, Donald *Professor Emeritus* M.M., Chicago Musical College.
- Thomas, Ronald B. *Associate Professor* M.M., Boston University; music education.
- Vlahcevic, Sonia K. *Professor* Ph. D., Catholic University; piano, theory.

The Department of Music views graduate students as sensitive musicians who bring with them a particular educational background and a variety of life experiences. They have defined for themselves their professional and artistic goals. The graduate program is a collaborative effort among the students and the faculty to help each student achieve these goals.

The music curriculum allows individual uniqueness and expertise. Its flexibility accommodates the personal aspirations of the

student while it emphasizes quality musicianship. At VCU a great deal is expected of graduate-level musicians, and the atmosphere in which they work is both provocative and challenging.

As musicians, all students perform regularly in recitals and concerts. These performances include more than 150 public concerts presented each year as well as studio and departmental recitals. VCU student and faculty composers are frequently featured in works for traditional instrumentation and/or our four synthesizers. Participating in the VCU musical community means involvement in a musically-rich environment — studio lessons with artist-teachers, small classes, independent study, and participation and touring with performing organizations and ensembles.

ADMISSION REQUIREMENTS

In addition to the School of the Arts admission requirements, applicants in music must meet the following requirements:

An audition is required. Appointments for auditions are arranged through the chairman of the Graduate Faculty Committee of the Department of Music. Audition tapes may be sent by out of state applicants. Preparation in music history and theory is assessed through the submission of a departmentally developed written examination or through the GRE Advanced Music Examination. The GRE Advanced Music Examination is recommended.

Composition

A portfolio of compositions must be submitted by all applicants to the M.M. program in composition. The portfolio should demonstrate their ability to compose in traditional and non-traditional styles.

The exit portfolio requirement consists of four works of at least five minutes duration each and a composition of a minimum of eight minutes duration plus an expository paper, score and parts, and/or tape. The student's portfolio should indicate a level of competence that is clearly beyond that found in the entering portfolio. This will be determined by the composition faculty.

Conducting

Applicants for the conducting program

will submit the written entrance examination. The audition-interview will cover the following areas:

- 1) proficiency in performance in at least one applied area equivalent to at least the first semester senior level of undergraduate study.
- 2) ability to conduct a work prepared in advance by the auditionee.
- 3) ability to play at sight simple keyboard passages and to harmonize a given melody at the keyboard.
- 4) physical coordination and ability to modify physical gestures quickly and efficiently.
- 5) ability to identify from score wrong notes in passages played at the keyboard by the examiner.
- 6) ability to express one's self verbally with clarity and efficiency.
- 7) knowledge of ranges, performing characteristics, and idiomatic writing for orchestral and band instruments and voice.
- 8) knowledge of music literature and styles.
- 9) ability to sight-read complex rhythms and pitch sequences.

The piano proficiency requirement for conducting majors will be met by the keyboard entrance requirements specified above and the score reading course.

PROGRAM AND DEGREE REQUIREMENTS

Proficiency Examinations

All newly admitted M.M. students will be given diagnostic examinations in music history, theory, piano, and aural skills (sight singing and melodic and harmonic dictation) in order that they may be effectively advised early in their academic program of areas of strength and weakness.

Proficiency in piano, graded to the pianistic needs of the various fields of concentration, must be demonstrated prior to the granting of the degree. The specific requirements are detailed in the *Handbook for Graduate Studies in Music*.

M.M.E. students will demonstrate proficiency in all the above areas through the competency assessments which are a part of their curriculum.

A reading knowledge of foreign lan-

guage(s) is required for the following curricula: music history (one language required for admission to candidacy, one additional language for graduation); church music (German required for admission to candidacy). The writer of any thesis or lecture-recital dealing with foreign literature shall demonstrate competence in the appropriate language(s). The student has the option of taking the Foreign Language Test of the Educational Testing Service or an examination administered by the department.

Applied Music (Master of Music)

The applied music faculty is comprised of artist-teachers who remain active professional performers, including musicians from the Richmond Symphony Orchestra, the National Symphony, the Contemporary Music Forum, Wolf Trap Farm Park, and principal freelance performers in the Metropolitan D.C. area. Vocal faculty include soloists with major orchestras, operatic and concert singers, coaches, and conductors. Performance opportunities include opera, oratorio, musical theatre, and appearances as soloists with the many regional and university ensembles.

The recitals which culminate the program will ordinarily include both a full-length solo recital and a lecture-recital.

Program Pattern

	<i>Credits</i>
Music History Electives	2
Analysis for Performance and Composition	6
Bibliography and Methods of Research	2
Conducting, Rehearsing, and Interpreting	3
Applied Music	6
Lecture Recital	3
Approved Electives	7
Recital	3
	<hr/> 32

Church Music (Master of Music)

Located in a region with more than 350 churches of all denominations, the church music major has exceptional opportunities for observation, field work, and participation in programs of all types. Through refinement of skills in conducting, analysis, and performance, as well as formulation of a philosophical base for program development and implementation, the graduate of this curriculum will be prepared to develop and administer multi-faceted church music pro-

grams. Since the graduate curriculum is designed to complement undergraduate majors in this field, students who have not had preparatory course work in hymnology, liturgics, children's choir, or choral repertoire will supplement their curriculum with selected courses from the undergraduate offerings. The thesis/recital requirement may be satisfied by the presentation and direction of a choral concert, or a written paper involving program development or other research. Other thesis alternatives may be developed with the approval of the Graduate Faculty Committee of the Department of Music.

Program Pattern

	<i>Credits</i>
Analysis for Performance and Composition	3
Applied Music	4
Bibliography and Methods of Research	2
Choral Pedagogy	3
Church Music Philosophy and Administration ...	6
Conducting, Rehearsing, and Interpreting	3
Field Work in Church Music	2
Approved Electives	6
Thesis—Recital	3
	<hr/> 32

Composition (Master of Music)

The composition degree program is centered on private study with faculty members who are themselves published composers as well as outstanding performers. Emphasis is placed on the development of traditional compositional skills as well as contemporary techniques. The availability of three separate electronic music studios gives VCU some of the most complete facilities of this type in the country. The graduate curriculum may be supplemented with courses in composition for the theatre and modern popular media. In addition to an exit portfolio of a minimum of four works of at least five minutes duration each, the student will submit a thesis composition of at least eight minutes duration accompanied by an expository paper, score and parts, and taped performance.

Program Pattern

	<i>Credits</i>
Music History Elective	2
Analysis for Performance and Composition	6
Bibliography and Methods of Research	2
Conducting, Rehearsing, Interpreting	3

Composition	6
Approved Electives	10
Composition Recital	3
	<hr/> 32

Conducting (Master of Music)

VCU offers the diversity of ensemble conducting experiences essential to the development of the graduate conductor. Conducting majors ordinarily elect to specialize in either band, choral, or orchestral conducting. At the discretion of the major teacher, the student will also assist in rehearsing and conducting major departmental ensembles. Close involvement with the performance lab program will enable conducting majors to form ensembles from which coaching and conducting experience can be gained, and each student will be expected to demonstrate skill in rehearsing and conducting at least one work in each of the areas outside his specialization. The recital requirement will be fulfilled by rehearsing and conducting a full concert or its equivalent during the final semester of study and the presentation of a written research document.

Program Pattern

	<i>Credits</i>
Applied Music (Conducting)	6
Score Reading	2
Ensemble	2
Bibliography and Methods of Research	2
Analysis for Performance	6
Music History, Literature, Composition or Theory electives (at least one course in each area)	8
Approved Electives	3
Recital	3
	<hr/> 32

Music Education (Master of Music)

The Department of Music offers both M.M. (Education) and the M.M.E. degrees. The M.M. degree has a traditional structure and provides the student an opportunity to take courses during the fall, spring, and summer sessions as a full-time student. This degree program is intended for students who are able to take a leave of absence from their school positions, those who are not currently teaching, or those who feel that the M.M.E. degree program is not suited to their needs. In addition to electives and required courses, a thesis is presented for this degree. The thesis may be developed on a subject related to some phase of music education or music

education history or may take the form of a recital or lecture-recital for students who have a particular interest in performance.

Program Pattern

	<i>Credits</i>
Applied Music	3
Arranging	3
Choral or Instrumental Pedagogy	3
Conducting, Rehearsing, and Interpreting	3
Music Education Philosophy and Technology	6
Approved Electives	11
Thesis	3
	<hr/> 32

Master of Music Education

The M.M.E. program is an alternative to traditional graduate study. Through a unique combination of the academic environment and the professional life of the student, the curriculum deals directly with the professional demands, responsibilities, and potentials of the skilled music educator. The emphasis is on both musical and teaching competence. Teachers entering the program must be experienced and currently employed, since their own classrooms and teaching are involved in their graduate study. The program involves two intensive summers on the VCU campus plus significant supervised research and development work during the school year in the teacher's own professional position.

Master of Music Education Program Schedule

Phase I

Major Activity . . . Homogeneous group. Acquisition of music education competencies and preparation for individual research

Place of Activity . . VCU

Credits Earned . . . 10

Courses. MUE 681, 5 credits
MUE 683, 5 credits

Phase II

Major Activity . . . Independent study projects in programmatic research and development plus preparation of thesis.

Place of Activity . . Teacher's classroom

Credits Earned . . . 6-6 research

Courses. MUE 685-686
12 credits

Phase III

Major Activity . . . Homogeneous group. Musical and educational exploration and analysis. Elective courses

Place of Activity . . VCU

Credits Earned . . . 10

Courses MUE 687 3 credits

Elective courses, 7 credits

For additional information regarding the M.M.E. degree program, write to the Department of Music, Virginia Commonwealth University, 1015 Grove Avenue, Richmond, VA 23284.

Music History (Master of Music)

Graduate music history study encompasses all aspects of the field: analysis of compositional styles, training in bibliography and research techniques, and the study of musicology. The proximity of the Library of Congress and the Smithsonian Institution affords enriched opportunities for research.

Program Pattern

	<i>Credits</i>
Analysis for Performance and Composition	6
Bibliography and Methods of Research	2
Conducting, Rehearsing, Interpreting	3
Seminar in Music History	2
Music History	10
Approved Electives	3
Thesis	6
	<hr/> 32

Piano Pedagogy (Master of Music)

The curriculum in piano pedagogy has been developed for the professional advancement of the teacher of private and group piano. The program includes the development of the student's performance ability; continued study of musical styles, literature, and analysis; materials and methods for all levels of instruction; and studio and classroom management. VCU is the *only state-aided institution in Virginia* to offer advanced study in piano pedagogy.

Program Pattern

	<i>Credits</i>
Advanced Pedagogy	3
Analysis for Performance	6
Applied Music	6
Bibliography and Methods of Research	2
Group Piano Methods	2
Piano Ensemble	1
Piano Technique Seminar	1
Practice Teaching	2
Project in Piano Pedagogy	1

Approved Electives (music history, literature, psychology recommended)	5
Recital	3
	<hr/> 32

ADDITIONAL INFORMATION

Students in all fields of graduate music study may, with the approval of their advisor, department chairman, and the director of graduate studies, elect independent study for the fulfillment of course requirements.

All degree-seeking students in music should consult the current *Handbook for Graduate Studies in Music* for specific departmental policies which pertain to their degree programs and the calendar of diagnostic and proficiency examination dates.

GRADUATE COURSES IN MUSIC**Courses in Applied Music (APM)**

501-560, 601-660 Private Instruction: Principal and Secondary Performance Mediums. Semester courses; one half hour or one hour private lesson per week. 1 to 3 credits. Extra fee required. Hour lessons are primarily for music students on major instruments. A minimum of one hour practice daily for each credit. Non-major must get course assignment from music department office. Private lessons are available in the following areas: voice, piano, organ, harpsichord, percussion, flute, clarinet, saxophone, oboe, bassoon, trumpet, trombone, baritone horn, French horn, tuba, violin, viola, cello, double bass, classical guitar, harp, composition, synthesizer, conducting.

563-564 Pedagogy. Continuous course; 2 lecture hours. 2-2 credits. A study of the musical, physiological, and psychological aspects of teaching instruments or voice. Second semester will include practical experience in teaching students under faculty supervision. Sections: (1) piano, (2) voice, (3) organ, (4) percussion, (5) brass, (6) woodwinds, (7) strings, and (8) guitar.

571 Choral Pedagogy. Semester course; 3 lecture hours. 3 credits. Teaching competencies relative to the choral training and use of the unchanged, changing, and matured voice will be stressed. Included are consideration of vocal production, pronunciation, aural skills, reading skills, and stylistic interpretation.

575-576 Score Reading. Continuous course; 2 laboratory hours. 1-1 credits. Prerequisite: APM 274 or the equivalent. A progressive course in reducing scores at the keyboard, beginning with simple choral scores and progressing to full orchestra and band. No degree credit for graduate composition majors.

585 Percussion Laboratory/Seminar. Semester course; 2 laboratory hours. 1 credit. Advanced course in specialized percussion techniques and literature designed for the performer, composer, and educator. Topics may include surveys of literature, notational problems, mallet making, and instrument maintenance.

Topics will vary from semester to semester depending on the needs and interests of the class. May be repeated up to four times for credit.

663 Advanced Pedagogy. Semester course; 3 lecture hours, 3 credits. Further study in pedagogical systems and techniques with emphasis on materials for intermediate and advanced-level students. Studio observation will be included. Sections: (1) piano, (2) voice, (3) organ, (4) percussion, (5) brass, (6) woodwinds, and (7) strings.

670 Large Ensembles. Semester course; 3 or 4.5 laboratory hours. .5 or 1 credit. Sections: (1) orchestra, (2) concert band, (3) symphonic band, (4) chorus, and (5) university-community chorale. (Auditions required for sections 1, 3, and 4.) Each section may be repeated up to six times for credit.

671 Piano Technique Seminar. Semester course; 1 lecture hour. 1 credit. Physiology of piano playing. Alternative approaches to building and reconstructing technique.

673,674 Piano Literature and Performance Practice. Semester courses; 2 lecture hours. 2, 2 credits. To familiarize the student with a broad repertoire of performing and teaching material. Discussion of approaches to styles and idioms of various periods; solution of technical and musical problems encountered in specific pieces; evaluation of various editions of piano literature.

675, 676 Teaching Practicum. Semester courses; 1 lecture hour. 1, 1 credits. Two semesters of supervised studio teaching; one consists of intermediate piano literature and the other of advanced piano literature.

679 Conducting, Rehearsing, and Interpreting. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Acquisition of refined conducting competence including effective and efficient rehearsal procedures, recognition and correction of errors, effective communication, appropriate stylistic interpretation, and complex dextrous skills.

680 Performance Laboratories. Semester course; 4 laboratory hours. 1 credit. A flexible program designed to involve students in the performance of a wide range of music. Included are chamber music and conducting and reading experience with the conducting band, orchestra, and chorus in which all enrolled students participate. Each section may be repeated up to six times for credit.

681 Group Piano Methods and Management. Semester course; 2 lecture hours. 2 credits. Management, methods, and materials for group teaching. Includes beginning students of all ages, intermediate-level students, and college keyboard skills classes.

690 Small Ensemble. Semester course; 3 laboratory hours. 1 credit. Sections: (1) stage band, (2) madrigalists, (3) collegium musicum, (4) piano ensemble, (5) opera workshop, (6) accompanying, (7) percussion ensemble, (8) trombone ensemble, (9) percussion lab ensemble, (10) clarinet choir, (11) new music ensemble, (12) brass ensemble, and (13) string quartet. (Auditions required for all sections.) Each section may be repeated up to six times for credit.

Courses in Music History (MHT)

551-552 Orchestral Repertoire. Semester courses; 1 lecture hour (1 credit); 1 lecture and 2 laboratory hours (2 credits). Performance and study of selected major symphonic works from historical, analytical, and stylistic perspectives. Research reports will include comparisons of interpretations. Repertoire will consist of basic audition pieces selected by orchestras. Laboratory sessions will utilize available instrumentation for performance.

591 Topics in Music. Semester course; variable credits, 1-3. May be repeated for a maximum of 9 credits. Flexible term courses in selected aspects of music performance, theory, literature, or history. See Schedule of Classes for specific topic to be offered each semester.

617-618 History of Theory. Continuous course; 2 lecture hours. 2-2 credits. Reading and discussion of writings of the major theorists of Western music. (Not offered every year.)

630 History of Church Music. Semester course; 2 lecture hours. 2 credits. A survey of liturgical music from Biblical times to the present with emphasis on the music of the Jewish, Orthodox, Roman, and Protestant rites. (Not offered every year.)

643, 644 Notation. Semester courses; 2 lecture hours. 2, 2 credits. A study of European notational systems no longer in use, ca. 1200-1600 A.D. Transcription into modern notation of each of the various types. (Not offered every year.)

645 Gregorian Chant. Semester course; 2 lecture hours. 2 credits. Prerequisite: MHT 690. A study of the history, theory, design, and use of Gregorian Chant from its inception to the present. Discussion will include non-liturgical and supra-liturgical uses in other Western music. (Not offered every year.)

647, 648, 649, 650 Seminar in Music History. Semester courses; 2 lecture hours. 2 credits each semester. Prerequisite: MHT 696. An intensive study of a limited phase or segment of music history through examination of relevant materials and extended class discussion.

666 Twentieth Century Music. Semester course; 2 lecture hours. 2 credits. Impressionistic, expressionistic, neo-classic, and neo-romantic influences and styles of music. Development of new sound-generating techniques and methods for ordering the new tonal materials.

667 Music of the Middle Ages and the Renaissance. Semester course; 2 lecture hours. 2 credits. Prerequisite: MHT 690. Principal musical developments from the first through the sixteenth centuries. Sacred and secular monophonic, homophonic and polyphonic forms and styles; the development of instrumental idioms and forms.

668 Music of the Baroque. Semester course; 2 lecture hours. 2 credits. Prerequisite: MHT 690. Principal developments, ca. 1590-1750; accompanied monody and the beginning of opera; forms and styles of sacred and secular compositions. (Offered alternate years.)

669 Music of Rococo and Classical Eras. Semester course; 2 lecture hours. 2 credits. Prerequisite: MHT

690. Major developments in sacred and secular forms and styles, ca. 1730-1828; social and artistic influences on music; dominance of instrumental music; Mozart, Beethoven, and the German Symphony. (Offered alternate years.)

670 Music of the Romantic Era. Semester course; 2 lecture hours. 2 credits. Prerequisite: MHT 690. Influence of the Romantic Era on concepts of musical forms and styles: the development of the art song; the growth of opera; the exploitation of instruments and tonality. (Offered alternate years.)

690 Bibliography and Methods of Research. Semester course; 2 lecture hours. 2 credits. A course to introduce graduate students to the chief bibliographic materials in music and to help to develop skills of research and writing necessary to produce a thesis or other formal research paper. Offered yearly, fall semester.

Courses in Music Theory (MHT)

513 Arranging. Semester course; 3 lecture hours. 3 credits. Practical, technical, and conceptual considerations of arranging and transcribing for vocal and instrumental groups will be explored. Students will demonstrate competence in these creative areas to the optimum level of school and/or church music organizations.

613, 614, 615, 616 Seminar in Music Theory. Semester courses; 2 lecture hours. 2 credits each semester. Topical discussions and relevant research appropriate to the principal eras of music development. (Not offered every year.)

620 Set Theory. Semester course; 2 lecture hours. 2 credits. Discussion and analysis of sets as they are used in music, their function, mutation, and application in different historical periods. (Not offered every year.)

Courses in Music Composition (MUC)

505 Twentieth Century Techniques. Semester course; 3 lecture hours. 3 credits. Prerequisite: MHT 222 or permission of instructor. Composition in and analysis of techniques associated with Late Romanticism, Impressionism, Neo-Classicism, Expressionism, Serialism, and current avant-garde music. No degree credit for graduate composition majors.

506 Advanced Scoring Techniques. Semester course; 3 lecture hours. 3 credits. Application of idiomatic scoring devices for orchestral instruments and voices in both large and small combinations. No degree credit for graduate composition majors.

517 Introduction to Electronic Music. Semester course; 2 lecture and 2 laboratory hours. 3 credits. A study of laboratory techniques and composing for electronic instruments.

518 Electronic Music Control Systems. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MUC 517. A study and application of analog/digital control techniques used in electronic music composition.

525-526 Projects in Electronic Music. Semester courses; 4-12 laboratory hours. 2-6 credits. Prerequisite: permission of instructor. Each course may be repeated for a

maximum of 12 credits. Completion of selected projects in electronic module design and/or electronic music composition.

611-612 Analysis for Performance and Composition. Continuous course; 3 lecture hours. 3 credits. Analysis of the organization, combination, and manipulation of constructive devices of music from the sixteenth century to the present with demonstration of this knowledge through performance and composition.

621, 622, 623, 624 Composition Seminar. Semester course; 2 lecture hours. 2 credits each semester. Discussion, analysis, and criticism of selected compositions pertinent to the improvement of student skills and understanding.

Courses in Church Music (CHM)

621 Church Music Philosophy. Semester course; 3 lecture hours. 3 credits. Study of philosophical bases for the use of music in liturgical and non-liturgical worship from the Pre-Christian era to the twentieth century.

622 Church Music Administration. Semester course; 3 lecture hours. 3 credits. The administration of complex church music programs with emphasis on budgeting, personnel contracts, scheduling, recruiting, support groups, and touring.

635 Seminar in Organ Performance Practice. Semester course; 2 lecture hours. 2 credits. May be repeated up to 3 times for credit. Study of selected organ music from the Renaissance to the twentieth century with emphasis on performance practices, style, and structural analysis.

640 Field Work in Church Music. Semester course; 1 credit. May be repeated once for credit. Prerequisites: a position as a choir director or organist-director in a nearby church, and satisfactory completion of graduate piano proficiency requirements.

Courses in Music Education (MUE)

575 Aspects of Popular Music. Semester course; 3 lecture hours. 3 credits. At the completion of the course, the student shall be able to articulate a thoughtful perspective of so-called "Classical Music" and "Pop Music," as well as be able to explicate the intellectual, aesthetic, and cultural aspects of this music. Open to both majors and non-majors; no degree credit for undergraduate music majors.

576 The Phenomenon of "Rock." Semester course; 3 lecture hours. 3 credits. After analyzing the formal musical principles and the socio-literary phenomenon of Rock music, as reported in Rock newspapers, books, and articles, and record jackets, etc., the student shall be able to offer cohesive and logical evidence, verbally and through position papers, which will lead to a clearer definition and understanding of this youth movement. He will also be able to cite, with corroborative evidence, an accurate survey of its historical development. No degree credit for music majors.

583 Special Workshop in Music Education. Semester course; 15-45 laboratory hours. Variable credits.

587 Rhythms for Elementary Aged Children. Semester course; 3 lecture hours. 3 credits. Significant contributions of rhythmic activity to the social, physical, emo-

tional, intellectual, and musical growth of children. Fundamental rhythms, singing songs and games, traditional folk and national dances, creative movement, and the use of practical classroom materials in music education will be presented.

593 Influencing Behavior Through Music. Semester course; 3 lecture hours. 3 credits. A study of the methodology of behavior modification through music. Students will learn to analyze and make appropriate choices among existing methods of behavioral modification employing music. The student will also develop appropriate observational techniques.

595 Music and the Exceptional Individual. Semester course; 3 lecture hours. 3 credits. A comprehensive study of music activities for special populations (e.g., mentally retarded, emotionally disturbed, learning disabled, cerebral palsied, etc.) of all ages. Topics will include identification of populations, programs, facilities, literature, services, and resources.

597 Human Response to Music. Semester course; 3 lecture hours. 3 credits. The human response to music in relation to physiological, cognitive, and affective responses; music ability and preference; acoustics and research methods applied in human responses to music problems will be studied.

646 Aesthetics. Semester course; 2 lecture hours. 2 credits. A study of music from the standpoint of design and craftsmanship as it embodies the principles of art defined and reflected in the literary writings of philosophers and composers. Examples of other art forms will be examined when relevant.

661-662 Music Education Philosophy and Technology. Continuous course; 3 lecture hours. 3-3 credits. Development of educational competencies which are intrinsic to contemporary educational processes including strategy design, evaluation procedures, curricula structuring, and school administration. Alternatives within these areas of competence will be developed and substantiated through philosophical rationale.

675 Pedagogy of Music. Semester course; 2 lecture hours. 2 credits. A class designed to train the prospective teacher to present the elements and materials of music in a program designed for the general classroom; to include listening, performing, composing, and incorporating music in a meaningful aesthetic experience.

676 School Music Supervision and Administration. Semester course; 2 lecture hours. 2 credits. The study of the organization, curriculum, course content, administration, and personnel problems in public school music.

681 Integrated Musical Behaviors. Summer course; 10 hours weekly for 8 weeks. 5 credits. As a culmination of course activity, each student will demonstrate operational competencies to the level of the optimum field demands of his teaching specialty in all of the following areas: stylistic interpretation of music, conducting skills, rehearsal operations, repertoire selection, composing, arranging, functional piano performance, sight singing, score reading, and usage of electronic music instruments. In addition, each student will demonstrate performance capabilities on one instrument (or voice) to the level of standard professional repertoire.

683 Music Education Processes. Summer course; 10 hours weekly for 8 weeks. 5 credits. Each student will analyze three major educational systems and/or documented field operations and will evaluate operational procedures against stated or implied philosophical positions. To the level of the optimum field demands of his teaching specialty, each student will demonstrate operational competencies in the following areas: assisting students to sing with accuracy and appropriate vocal quality; using a variety of educational strategies; teaching basic techniques on orchestral and band instruments; employing contemporary educational technology; objectively evaluating his own and other's teaching; preparing alternatives in scheduling, purchasing, and other administrative procedures; assisting students to hear accurately; and structuring appropriate curricula which involve students in a wide range of musical behaviors.

685-686 Music Education Research. Continuous course; 6-6 credits. Prerequisites: MUE 681 and 683. Each student will design and implement a programmatic research and development project dealing with either instructional processes or curricular structures. The project activity will be conducted in a school classroom and will involve students in both the research and development operations. Two two-day seminars will be held each semester for analysis and evaluation of the project operations. The student will prepare a thorough report of all research and development operations including conclusions and recommendations.

687 Research Assessment and Music Interaction. Semester course; 1 or 3 credits. Prerequisite: MUE 685-686. Based on assessments of research and development activities of the entire class, each student will identify and explore styles of musical interaction and teaching with his class and the current MUE 683 class. The one-credit section is designed for students continuing projects beyond the summer term. (Open only to Master of Music Education students.)

Department of Painting and Printmaking

FACULTY

- Bradford, James A. *Associate Professor* M.F.A., University of Wisconsin; painting.
 Bumgardner, James A. *Professor* B.F.A., Virginia Commonwealth University; painting.
 Campbell, Jewett *Professor Emeritus* attended New York Art Students' League; painting.
 Donato, Gerald M. *Associate Professor* M.F.A., University of Wisconsin; painting.
 Drought, Michael *Assistant Professor* M.F.A., University of Wisconsin; painting.
 Freed, David C. *Professor* M.F.A., University of Iowa; printmaking.
 Gower, Ann Renee *Instructor* M.F.A., Syracuse University; painting.
 Kevorkian, Richard E. *Professor* M.F.A., California College of Arts and Crafts; painting.
 Kord, Victor *Professor and Chairman* M.F.A., Yale University; painting.
 Martin, Bernard M. *Professor* M.A., Hunter College; painting.

Miller, James B. *Assistant Professor* M.F.A., University of Arkansas; painting and printmaking.
 Nathan, Gail *Assistant Professor* M.F.A., Rutgers University; painting.
 Pollak, Theresa *Professor Emerita* attended New York Art Students' League; painting.
 Russell, Milo F. *Professor* M.A., University of Virginia; painting.
 Tisserat, Barbara *Assistant Professor* M.F.A., University of Wisconsin; printmaking.
 Wetton, Philip S. *Associate Professor* Diploma, Coventry College; printmaking.
 Yarowsky, Morris *Professor* M.F.A., California College of Arts and Crafts; painting.

The Department of Painting and Printmaking offers a graduate program of study leading to the M.F.A. degree. Students admitted to the program are expected to have achieved a high level of competency in either painting or printmaking. The graduate program is designed to encourage the development of professional attitudes and skills, with an emphasis on individual investigation.

ADMISSION REQUIREMENTS, M.F.A.

Undergraduate Preparation: In addition to the School of the Arts admission requirements, applicants in the visual arts must have completed a minimum of 36 semester hour credits in art at the undergraduate level.

Portfolio: Painting—a minimum of 12 slides of representative work, three of which must be drawings. Printmaking—a minimum of 12 recent unframed prints and three drawings. Although all reasonable care will be given the work, the university will not be responsible for its condition.

DEGREE REQUIREMENTS, M.F.A.

Program Pattern

First Semester	Credits
Studio (6 credits of major, 3 credits of minor)	9
Issues in Contemporary Visual Arts	
or	
Art and Critical Theory	
or	
Graduate Art History	3
Graduate Seminar	3
	15

Second Semester

Studio (6 credits of major, 3 credits of minor)	9
Issues in Contemporary Visual Arts	
or	
Art and Critical Theory	
or	

Graduate Art History	3
Graduate Seminar	3
	15

Third Semester

Studio (6 credits of major, 3 credits of minor)	9
Aesthetics	3
Graduate Seminar	3
	15

Fourth Semester

Studio (6 credits of major, 3 credits of minor)	9
Elective (Graduate Level)	3
Graduate Seminar ⁴	3
	15

TOTAL	60
-------	----

GRADUATE COURSES IN PAINTING AND PRINTMAKING (PAP)

525 Issues in Contemporary Visual Arts. Semester course; 3 lecture hours. 3 credits. May be repeated up to 6 credits. Prerequisite: painting and printmaking majors only. The investigation of content and meaning of major directions in contemporary art as they relate to the studio. Students will relate their own work to major movements in contemporary visual art.

527, 528 Art and Critical Theory. Semester courses; 3 lecture hours. 3,3 credits. Prerequisite: general art history or equivalent. Reading and interpretation of major critical works on painting and related areas. First semester: modernist critics and later schools: Greenberg, Fried, Judd, Lippard. Second semester: structuralist criticism, analysis of theoretical aspects of conceptual art, recent major critical writing on painting.

605, 606, 607, 608 Graduate Painting. Semester courses; 6 or 12 studio hours. 3 or 6 credits. A studio class in which primary emphasis is placed on the creative disciplines of contemporary painting. Special attention is given to the development of personal expression through individual criticism.

615, 616, 617, 618, 619, 620 Graduate Printmaking. Semester courses; 6 or 12 studio hours. 3 or 6 credits. Specialization in one printmaking medium with emphasis upon technical research and the aesthetic suitability of design to medium. Individual and group criticism.

621, 622 Graduate Drawing. Semester courses; 6 studio hours. 3, 3 credits. A studio class with individual criticism. Special attention is given to contemporary concepts. Permission of instructor required for non-painting and printmaking majors.

690 Graduate Seminar. Semester course; 1,3 lecture hours. 1,3 credits. May be repeated. Degree requirement for graduate students in the Department of Painting and

⁴Enrollment in the Graduate Seminar is mandatory for the duration of the student's study in the graduate program.

Printmaking. Weekly seminar for the purpose of discussion of recent artistic developments in painting and printmaking. Critiques dealing with student work will take place.

Department of Sculpture

FACULTY

Helfgott, Myron *Professor M.F.A.*, Southern Illinois University.

Henry, Charles R. *Associate Professor M.F.A.*, Cranbrook Academy.

North, Harold E. *Professor M.F.A.*, Virginia Commonwealth University.

Renick, Charles C. *Professor and Chairman M.F.A.*, Virginia Commonwealth University.

Seipel, Joseph *Assistant Professor M.F.A.*, Maryland Institute, College of Art.

Van Winkle, Lester *Associate Professor M.A.*, University of Kentucky.

The Department of Sculpture exists primarily for persons who wish to structure their ideas by manipulating tangible materials. The goals of the M.F.A. degree program in sculpture are to instill in students a sense of pride based on competence and to help them develop methods of working and attitudes which will sustain them as they grow professionally.

The department has a faculty of six teachers who represent various directions and attitudes related to the making of sculpture. These range from formal ideas involved with solutions in wood, steel, stone and plastic to those in video, music and holography.

Both formal and informal contact with the faculty is designed into the program with mutually beneficial results. Additionally, the graduate student is encouraged to participate in, and contribute to, our undergraduate program.

The graduate student is provided with a generous amount of studio space and is given time, support, and encouragement to pursue his independently determined goals.

ADMISSION REQUIREMENTS, M.F.A.

Undergraduate Preparation: In addition to the School of the Arts admission requirements, applicants in the visual arts must have completed a minimum of 36 semester hour credits in art at the undergraduate level.

Portfolio: A minimum of 12 slides of representative work, three of which must be drawings.

DEGREE REQUIREMENTS, M.F.A.

Program Pattern

First Semester	Credits
Studio (Graduate Sculpture)	9
Elective	3
Graduate Seminar	3
	15

Second Semester

Studio (Graduate Sculpture)	9
Elective	3
Graduate Seminar	3
	15

Third Semester

Studio (Graduate Sculpture)	9
Elective	3
Graduate Seminar	3
	15

Fourth Semester

Studio (Graduate Sculpture)	9
Elective	3
Graduate Seminar*	3
	15
TOTAL	60

GRADUATE COURSES IN SCULPTURE (SCU)

500, 600 Graduate Sculpture. Semester course; 8-10 studio hours. 4-5 credits. May be repeated. Emphasis on individual creative production with periodic exposure of student's work and ideas to the critical attention of the teaching faculty of the Department of Sculpture and other graduate students.

517 Seminar in Contemporary Sculpture. Semester course; 3 lecture hours. 3 credits. A forum for consideration and discussion of recent developments in the field. May be repeated for a maximum of 12 credits.

690 Graduate Seminar. Semester course; 1 or 3 lecture hours. 1 or 3 credits. May be repeated. Degree requirement for graduate students in the Department of Sculpture. Weekly seminar for the purpose of exploring recent developments in sculpture and conducting critiques in which students can discuss the ideas and attitudes manifest in their work.

Department of Theatre

FACULTY

Bennett, Beate H. *Assistant Professor Ph.D.*, University of South Carolina; comparative literature, dramaturgy.

Campbell, Kenneth *Professor and Chairman Ph.D.*, University of Denver; directing.

*Enrollment in the Graduate Seminar is mandatory for the duration of the student's study in the graduate program.

- Conrad, W. Hyrum *Assistant Professor* M.F.A., Brigham Young University; dance, stage movement.
- Erickson, Maurice Leonard *Assistant Professor* M.F.A., Ohio University; acting.
- Goodlin, John C. *Assistant Professor* M.F.A., University of Tennessee; acting, voice for stage.
- Hodges, Raymond *Professor Emeritus* M.A., Teachers College, Columbia University.
- Holloway, C. Thomas *Professor* M.F.A., Boston University; creative dramatics, directing.
- Hopper, Elizabeth *Assistant Professor* M.F.A., University of Wisconsin, Madison; costume design.
- Hopper, Gary *Assistant Professor* M.F.A., Boston University; acting.
- Janke, Robert H. *Associate Professor* Ph.D., Columbia University; speech, theatre.
- Newdick, Richard L. *Associate Professor* M.A., University of North Carolina; directing, dramatic literature.
- Parker, James W. *Associate Professor* Ph.D., City University of New York; theory, criticism, dramatic literature, acting.
- Pike, Richard T., Jr. *Assistant Professor* M.F.A., Florida State University; stage design.
- Szari, Louis J. *Assistant Professor* M.F.A., University of Texas; technical theatre.

The Department of Theatre offers intensive M.F.A. degree programs in performance, design, dramaturgy, and theatre education. The curriculum provides graduate students with the educational and professional foundations essential to attaining the highest standards in the art of the theatre. Applicants are admitted only upon satisfactory demonstration of ability and genuine interest through audition and interview. The demands of the program are stringent and only those students who are willing to commit themselves to the work in the department, who are capable of observing strict professional discipline, and who are in good health should apply.

The M.F.A. program is based on the philosophy that the nature of theatre requires the creative collaboration of all theatre artists working together as members of a company. All company members share the responsibility of solving problems relating to the planning, preparation, and realization of productions.

The curriculum consists of an intensive program of related practical and theoretical studies. Each semester a specific period of theatrical history — from the Greeks to the Contemporary/Experimental — will be chosen as an area of concentration. All company productions and performance events will reflect the period being studied.

ADMISSION REQUIREMENTS, M.F.A.

In addition to the School of the Arts admission requirements, applicants in theatre must have completed a minimum of 30 semester hour credits in theatre at the undergraduate level. Professional experience will also be considered.

An audition or presentation of portfolio is required in addition to a personal interview which the applicant must arrange with the graduate advisor of the Department of Theatre.

Special Degree Option Requirements:

Performance (Acting and Directing). Students must present upon entrance at least six hours of undergraduate production or technical theatre course credit or the equivalent in professional experience.

Production (Costume and Stage Design). Students must present upon entrance at least six hours of undergraduate performance course credit or the equivalent in professional experience.

Dramaturgy. Students must present upon entrance at least three hours of undergraduate acting credit and three hours of undergraduate technical theatre credit or the equivalent in professional experience.

Theatre Education. Students must present upon entrance at least three hours of undergraduate acting or directing credit and three hours of undergraduate design or technical theatre credit or the equivalent in professional experience.

Deficiencies in any of these special degree option requirements may be satisfied at Virginia Commonwealth University, but no graduate credit will be given for them. These prerequisites must be satisfied before the student may apply for candidacy.

CANDIDACY

After the completion of 15 and before the completion of 24 semester hours credit, or one full academic year, whichever comes first, the student seeking an advanced degree from the Department of Theatre, Virginia Commonwealth University, must apply for candidacy. Before applying for candidacy, candidates for the M.F.A. in *acting* must have completed two roles, at least one with a faculty director prior to applying for can-

didacy; in *directing* must have completed one stage management assignment and one directing assignment (which may be an apprenticeship); in *stage design* must have served in a design position of substantial authority for at least one departmental production; in *costume design* must have completed two costume design classes and served in a position of designated authority; in *dramaturgy* must have served as assistant-to-the-director for one production and assistant-to-the-designer for one production, both faculty directed; and in *theatre education* must have completed one stage management assignment and one directing assignment (which may be an apprenticeship).

In addition to the requirements listed above for the various area specialties, the process of evaluation for advancement to candidacy may require the presentation of a portfolio and/or audition; written, oral, and/or practical testing; and other devices deemed by the Department of Theatre to be serviceable measurements to determine the prospective success of the candidate at the advanced level in the program. Each candidate for the Master of Fine Arts in theatre may stand for evaluation for admission to candidacy a second time if the evaluation for candidacy is unsuccessful. If, after the second evaluation, the student is denied candidacy, he is obliged to withdraw from the program. In special circumstances where unusual strength in another area is evidenced and when the student is acceptable to the graduate faculty, he may be invited to transfer into another degree option. The completion of 18 semester hours credit is the latest point at which a student may transfer into another degree option without loss of credits.

Prior to applying for candidacy all students in all degree options in the M.F.A. program in theatre must satisfy the following *noncredit degree requirement*: Theatre History, six semester credits. This undergraduate course must be taken at this university unless exempted by test. If required to enroll in Theatre 307-308: Theatre History, the student will receive no semester credits towards the M.F.A. credit hour requirements. The exemption test must be taken no later than the end of the first semester of matriculation and may be attempted twice.

DEGREE REQUIREMENTS, M.F.A.

Core Requirements

Candidates for the M.F.A. in theatre in the areas of acting, directing, costume design, stage design/technical theatre, and dramaturgy must satisfy the following core requirements in addition to the requirements of their special area. Theatre education candidates see below.

- A. Theatre 703-704: Theory and Criticism . . . 6 credits
B. Theatre Literature . . . 6 credits

(Both Theatre 703-704 and Theatre Literature may be exempted on the basis of an oral, written, or practical test administered between the date of admission to the program and the first matriculation period, or on the basis of the undergraduate transcript. If 3 or 6 hours in either or both areas are exempted, the student must select the number of hours exempted in approved electives.)

- C. Theatre 609: Seminar in Production
Process . . . 6 credits
D. Art 799: Thesis . . . 3 credits

TOTAL . . . 21 credits

PROGRAM PATTERNS

ACTING	Credits
Colloquium and Practical Training	12
Production	12
Graduate Acting	3
Approved Electives	12
Core	21
	60

DIRECTING	
Directing	12
Internships	6
Minor emphasis	9
Theatre Literature	
Design	
Acting	
Approved Electives	12
Core	21
	60

STAGE DESIGN/TECHNICAL THEATRE

Stage Design	12
Costume Design	6
Scene Painting	3
Light Design	6
Advanced Theatre Technology	3
Approved Electives	9
Core	21
	60

COSTUME DESIGN

Costume Design	12
Scene Design	6
Light Design	3

Advanced Theatre Technology	3
Approved Electives	15
Core	21
	60

DRAMATURGY

Area of Concentration	
Major Emphasis.	9
American Dramatic Literature	
British Dramatic Literature	
Dramatic Literature in Translation	
Minor Emphasis.	6
Arts in General	
Art History	
Music History	
Art or Music Criticism	
Aesthetics	
World Literature	
Cultural History or Anthropology	
Philosophy and Religion	
Secondary Area of Concentration	12
Directing	
Management	
Administration	
Internship	3
Approved Electives	9
Core	21
	60

THEATRE EDUCATION

The Master of Fine Arts in theatre education will take the following sequence of courses; the student will not be required to satisfy the core requirements for degree options in acting, directing, costume or stage design, or dramaturgy.

	<i>Credits</i>
Dramatic Theory and Criticism	6
Theatre Literature	6
Special Area Requirements:	
Design	6
Scene Design	
Costume Design	
Lighting Design	
Sound Design	
Performance	6
Acting	
Directing	
Rehearsal and Performance	
Management/Administration	3
Stage Management	
Theatre Administration	
Creative Dramatics	6
Speech and Theatre Methods	3
Theatre Education Curriculum Evaluation	3
Theatre Education Professional Internship	12
Approved Electives	9
	60

Phase One — all course work except Creative Dramatics, Speech and Theatre Methods, Curriculum Evaluation, and Professional Internship.

Phase Two	<i>Credits</i>
Summer One: Creative Dramatics	3
Speech and Theatre Methods.	3

Academic Year: Professional Internship	12
Summer Two: Creative Dramatics	3
Curriculum Evaluation	3

Research and Documentation, Theatre Education

A final report for Theatre Education Professional Internship is a degree requirement. Upon completion of the degree requirements four copies of this report will be prepared in accordance with School of the Arts procedures.

GRADUATE COURSES IN THEATRE (THE)

505-506 Stage Design. Continuous course; 1 lecture and 4 studio hours. 3-3 credits. Prerequisite: permission of instructor. A professionally-oriented study of the techniques, methods, and problems of stage design. Participation in departmental productions.

507 Introduction to Graduate Study in Speech and Theatre. Semester course; 3 credits. A study of methods used in graduate research in drama and speech.

508 Scene Painting. Semester course; 1 lecture and 4 studio hours. 3 credits. A detailed study of methods of painting scenery based on traditional and contemporary theories. Participation in departmental productions. This course may be repeated for a maximum of 9 credits.

513-514 Acting Styles. Continuous course; 6 studio hours. 3-3 credits. Prerequisite: permission of instructor. A study of the history and theory of acting styles from the Greeks to the present. Open only to theatre majors upon satisfactory audition.

519 Instructional Methods in Theatre and Speech. Semester course; 3 lecture hours. 3 credits. A study of the basic methods used in the teaching of theatre and speech communication.

525 Theatre Administration. Semester course; 3 lecture hours. 3 credits. The business aspects of successful theatre operation — college, commercial, community, regional — from basic purchasing methods to publicity and "house" operation for the finished product.

528 Puppetry. Semester course; 2 lecture and 2 studio hours. 3 credits. A study of puppetry as a serious and dynamic performing art, explored through its historical traditions and practical applications.

593 Professional Internship. Semester course; 3-9 credits. May be repeated. Prerequisite: permission of department chairman. A practicum in theatre conducted in cooperation with selected professional or semi-professional theatre organizations. Majors only.

594-595 Practicum in Theatre for Special Populations. Continuous course; 1 lecture and 4 studio hours. 3-3 credits. Prerequisite: permission of instructor. A study of theatre principles and techniques as they apply to the

exceptional and handicapped student. A supervised practicum in the application of theatre curricula design and teaching methodology to the special needs of the institutionalized, incarcerated, and other atypical populations.

596 Practicum in Creative Dramatics. Semester course; 1 lecture and 4 studio hours. 3 credits. May be repeated. A study of the theory of creative dramatics as it applies to elementary and secondary school education. A supervised practicum in the application of theory to classroom methods.

603, 604 Problems in the History of Dramatic Literature. Semester courses; 3 lecture hours. 3, 3 credits. An advanced, detailed study of a selected aspect in the development of dramatic literature.

605-606 Advanced Studies in Stage Design. Continuous course; 1 lecture and 4 studio hours. 3-3 credits. Prerequisite: permission of instructor. An advanced study in specific problems in stage design.

607 Problems in Scenic Techniques. Semester course; 1 lecture and 4 studio hours. 3 credits. Prerequisite: permission of instructor. An advanced, detailed study of selected problems in contemporary theory and practice of scenic technique. May be repeated.

609 Seminar in Production Process. Semester course; 1 lecture and 4 laboratory hours. 3 credits. May be repeated with a change of topic for a maximum of 9 credits. Students and faculty in design, technical theatre, and performance working together in studio situations to identify and solve problems relating to the planning, preparation, and realization of productions.

613 Workshop in Acting. Semester course; 1 lecture and 2 studio hours. 1 credit. May be repeated for a maximum of 3 credits. Focus on acting problems related to the individual actor's needs to develop proficiency in certain areas.

621, 622 Problems in Costume Design. Semester courses; 2 lecture and 2 studio hours. 3, 3 credits. Prerequisite: permission of instructor. An advanced study in specific problems in costume design.

623, 624 Advanced Studies in Modern Drama. Semester courses; 3 lecture hours. 3, 3 credits. Intensive, detailed studies of selected subjects in major Continental and American drama.

630 Production. Semester course; 6 laboratory hours. 3 credits. The design, rehearsal, and performance of

dramatic works. May be repeated.

640, 641 Advanced Theatre Projects. Semester courses; 1 or 2 lecture and 4 or 8 laboratory hours. 3 or 6 credits per semester. Individual or group projects in acting, directing, costume design, stage design, or dramaturgy. May be repeated.

651 Advanced Design Studio. Semester course. 1 lecture and 4 laboratory hours. May be repeated. Intensive individual training in design and presentation processes as they apply to contemporary professional production.

661, 662 Problems in Stage Directing. Semester courses; 3 lecture hours. 3, 3 credits. Prerequisite: permission of instructor. An advanced, detailed study of selected aspects of directing techniques for the stage.

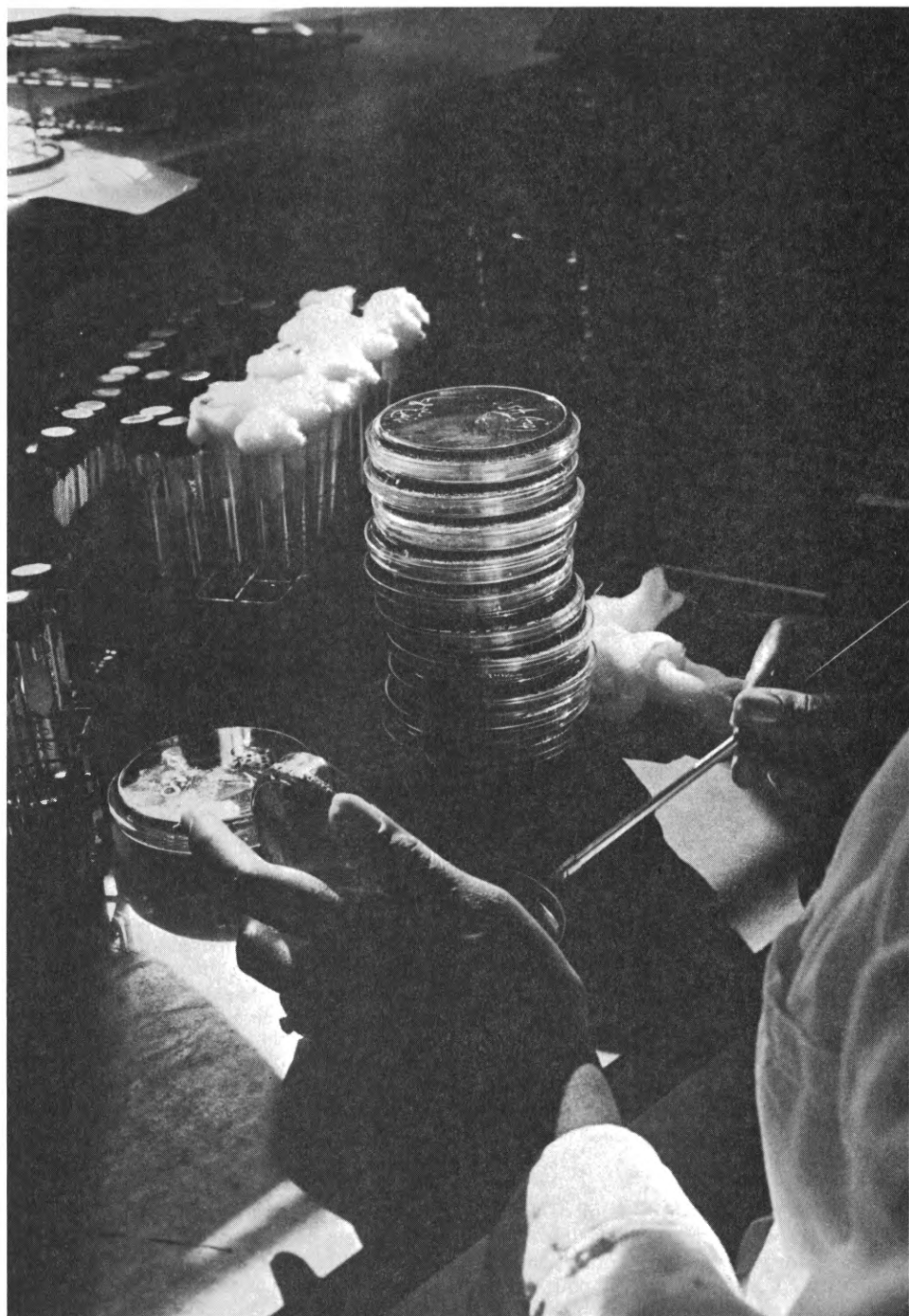
693 Colloquium and Practical Training. Semester course; 2 lecture and 2 studio hours. 3 credits. Literary, historical, and theoretical studies together with specialized voice and movement training related to dramatic works in production. May be repeated for a maximum of 12 credits.

694 Theatre Education Professional Internship. Semester course; 6 credits. May be repeated. Prerequisites: THE 596 and 519 and permission of the graduate advisor in theatre. Research, design, and either implementation or thoroughly planned implementation of a curricular research and development project of relevance to a formal speech and/or theatre education program.

697 Research and Special Problems in Theatre. Semester course; 1, 3 lecture hours. 1, 3 credits. Individually directed study and research under faculty supervision on approved research problems or projects in theatre. May be repeated with permission of graduate advisor.

703-704 Dramatic Criticism and Theory. Continuous course; 3 lecture hours. 3-3 credits. The major dramatic theories from Aristotle to the twentieth century and associated movements as they affect the development of western drama.

791 Seminar in Special Issues in Theatre. Semester course; variable credit. 1-3 credits per semester. May be repeated for a maximum of 9 credits. Prerequisite: permission of instructor. An advanced, detailed study of selected, contemporary issues not included in the regular curriculum. See Schedules of Classes for specific subjects to be offered each semester.



PART V—School of Basic Sciences

ADMINISTRATIVE OFFICERS

S. GAYLEN BRADLEY, Ph.D.

Dean

WILLIAM L. DEWEY, Ph.D.

Associate Dean

Basic sciences historically have been an integral part of the curriculum of medicine, dentistry, pharmacy, nursing, and allied health fields. In the earlier years of this university, the basic sciences departments were administered by the School of Medicine with the dean of that school working with a committee of deans to establish policy for the teaching of the basic sciences in the several professional schools. In 1966, by the action of the Board of Visitors, a separate School of Basic Sciences and Graduate Studies was established. In 1974, with the establishment of a university-wide graduate program, it became the School of Basic Sciences. The Ph.D. programs at MCV continue to be administered by the chairman of the MCV Graduate Committee.

PROGRAM

All departments in the School of Basic Sciences provide instruction in their disciplines for students in the other schools on the MCV Campus. By developing large, strong departments with a good balance of

faculty, postdoctoral fellows, and graduate assistants, it is possible to provide quality instruction for all the health profession schools, and to maintain strong research, M.S., and Ph.D. programs, including combined M.S. or Ph.D., M.D. or D.D.S. programs.

PH.D. AND M.S. PROGRAMS IN THE SCHOOLS OF BASIC SCIENCES, MEDICINE, AND PHARMACY

The graduate programs in the Schools of Basic Sciences, Medicine, and Pharmacy at the Medical College of Virginia are under the supervision of the MCV Graduate Committee which is composed of one faculty member from each department offering graduate degrees. The dean of the School of Basic Sciences serves as chairman of this committee.

The current membership of this committee is: Dr. Juan A. Astruc, anatomy; Dr. Joseph P. Liberti, biochemistry; Dr. Sung Choi, biostatistics; Dr. Lindon J. Eaves, human genetics; Dr. Joseph V. Formica, microbiology and immunology; Dr. Robert L. Balster, pharmacology and toxicology; Dr. Steven Price, physiology and biophysics; Dr. George W. Gander, pathology; Dr. Marvin Boots, pharmaceutical chemistry; and Dr. John H. Wood, pharmacy and pharma-

ceutics. Committee members are appointed by their respective deans upon the recommendation of the department chairmen. The committee establishes and maintains admission requirements and rules and procedures for awarding the M.S. and Ph.D. degrees. Courses to be offered for graduate credit in these schools must have the approval of this committee, following the rules and guidelines established by the University Graduate Council.

REQUIREMENTS FOR ADMISSION

1. The purpose of admission requirements and procedures is to encourage applications from competent students and to insure selection of those whose motivation, ability, education, and character qualify them to successfully pursue graduate study in preparation for a scientific career.
2. The following credentials constitute an application and should be sent to the Dean, School of Basic Sciences, Medical College of Virginia, Virginia Commonwealth University, Box 110, MCV Station, Richmond, VA 23298.
 - a) Application for admission on a form furnished to the applicant on request. A fee of \$10, in the form of a check or money order (payable to VCU), must accompany the application. The fee cannot be returned nor credited toward tuition payment.
 - b) Official transcripts of all undergraduate and graduate work, sent directly from college or university registrars to the Office of the Dean, School of Basic Sciences.
 - c) Letters of recommendation from three present or former teachers, or others believed by the applicant to be qualified to evaluate fitness to engage in graduate study for the degree in the field of choice.
 - d) A personal letter from the applicant summarizing motivation, education, and aims in pursuing graduate study.
 - e) Verbal, quantitative, and analytical portions of the Graduate Record Examination are required. Advanced tests (biology, chemistry, physics, or mathematics) are recommended where appropriate. The Medical College Admission Test or Dental Aptitude Test is acceptable in lieu of the Graduate Record Examination for combined degree programs. Scores are to be sent to the dean. For information on this examination, contact University Enrollment Services, Graduate Admission, Virginia Commonwealth University, 821 West Franklin Street, Richmond, VA 23284 or the Office of Student Services, School of Education, Virginia Commonwealth University, Oliver Hall, 2087, Richmond, VA 23284 or Educational Testing Service, Box 955, Princeton, NJ 08540.
 - f) Foreign applicants who do not use English as their natural language must have a TOEFL score greater than 550—See section on international students in Part I of this bulletin.
3. Acceptance of an applicant rests with the chairman, MCV Graduate Committee, upon recommendation of the major department.

REGISTRATION

While most students register for the first semester, beginning in August, arrangements may be made to initiate graduate work at other times during the academic year.

SCHOLARSHIPS, ASSISTANTSHIPS, AND FELLOWSHIPS

Graduate students may apply for a number of state or federal teaching assistantships, scholarships, or fellowships, including the A. D. Williams fellowships (college endowment). These usually pay \$5,040, plus tuition and fees on a calendar year basis. The Daniel T. Watts Distinguished Fellowship is awarded to students with exceptional academic credentials. The stipend for these fellowships is \$7,500 per annum. All tuition and fees are also paid.

A brief description of financial aid based on demonstrated need is contained in Part I

of this bulletin. Need-based aid programs include National Direct Student Loan, college work-study, and institutional loans.

THE STUDENT'S ADVISOR AND ADVISORY COMMITTEE

1. Each student shall have an advisor and an advisory committee.
2. Appointment and duties of the advisor.
 - a) An initial advisor will be the director of the graduate program of the student's department, or his designee.
 - b) A permanent advisor shall be appointed by the chairman of the MCV Graduate Committee upon recommendation of the chairman of the student's major department. Appointment should be made no later than the end of the second semester after acceptance. A change in advisor may be made by the chairman of the MCV Graduate Committee upon recommendation of the chairman of the major department.
 - c) The advisor shall be chairman of the student's advisory committee which should be appointed six months prior to the comprehensive examinations.
 - d) The advisor shall, with the student's advisory committee, have responsibility for the total guidance of the student, subject to the approval of the chairman of the major department and the chairman of the MCV Graduate Committee.
 - e) The advisor shall work out a plan of study with the student.
 - f) The advisor shall supervise the student's research work and thesis preparation and be one of the examiners of the thesis.
 - g) At the close of each academic year, the advisor shall submit to the Office of the School of Basic Sciences, a statement covering the progress of the student and recommendations as to whether the student's graduate studies shall be continued.

Appointment and duties of the student's advisory committee.

- a) The student's advisory committee shall be appointed six months prior to the comprehensive examinations by the chairman of the MCV Graduate Committee upon recommendation of the student's advisor and after the recommendation of the chairman of the major department. The composition of the advisory committee shall be such that all significant areas of the student's course work are represented. For the purpose of examinations and thesis evaluation, and because of special knowledge and distinction in the field of the candidate's work, an additional member, who may be from a different institution, may be appointed to the student's advisory committee by the chairman of the MCV Graduate Committee. Changes in the membership of the committee are made in the same way.
 - (i) The committee for the Ph.D. candidate shall consist of a minimum of five members as follows: the student's advisor; two other members of the graduate faculty of the department in which major work is to be taken; and at least two other representatives of the graduate faculty outside the major department, where feasible, from two different departments.
 - (ii) The committee for the M.S. candidate shall consist of a minimum of three members as follows: the student's advisor; one other member of the graduate faculty of the department in which major work is to be taken; and one representative of the faculty outside the major department.
- b) The student's advisory committee shall work with the student's

- advisor in guiding the student's graduate program.
- c) The student's advisory committee shall recommend and approve a degree program (including foreign language if applicable) for the student as soon as practical. The proposed M.S. program should be filed with the dean's office no later than the beginning of the third semester of study; for the Ph.D. degree, prior to the comprehensive examinations. In approving a foreign language, the student's advisory committee is guided by the importance of the language in the scientific literature of the student's major subject.
 - d) The student's advisory committee shall conduct the oral comprehensive and final examinations.

GENERAL REQUIREMENTS FOR GRADUATE DEGREES

1. All full-time graduate students are expected to register for a minimum of 15 semester hour credits per semester and six semester hours during the summer. This requirement includes research. As an example, when students are registered for ten credits in formal courses, they are expected to undertake five credits of research under their advisors or other approved faculty members.
2. Students may not take the comprehensive examination for the Ph.D. degree or the final oral examination for the M.S. degree if their overall grade-point average is less than 2.5 or if the grade-point average for courses within the major department is below 3.0. Research credits shall not be counted in computing this average, and shall be graded as P—pass satisfactory; or F—fail. Other grade interpretations are described in Part I of this bulletin.
3. All cases of unsatisfactory student performance, including any grade of D or F, failure to pass written or oral comprehensive examinations, or thesis or final examinations require action of the MCV Graduate Committee to permit students to continue.
4. Proficiency in a foreign language is not a degree requirement. However, in some graduate programs, due to the nature of the discipline, the demonstration of proficiency in a foreign language can be required by the student's advisory committee as stipulated by the department. When a foreign language is required, each foreign language examination shall be given by an examiner approved by the chairman of the MCV Graduate Committee. The chairman may elect to accept, as evidence of satisfactory foreign language knowledge, a comparable examination at another graduate school.
5. Five or more copies of the thesis (as required), prepared according to standards approved by the MCV Graduate Committee, shall be sent to the student's advisory committee in final form three weeks or more before the date of graduation. (Graduation dates are in May, August, and December.) These copies are to be submitted in temporary binders. Following acceptance of the thesis and passing of the final examination, it shall be the responsibility of the candidate to present to the dean's office the original plus four copies of the thesis suitable for binding along with a check to cover the cost of handling.
6. The dean will recommend the granting of a degree, only after all requirements have been fulfilled, including payment of all fees to the university, and after submission of the copies of the thesis for binding. Degrees are not granted *in absentia* unless specific written request is made to and permission is granted by the dean.

MASTER OF SCIENCE

1. Advanced graduate study leading to the Master of Science degree is offered in the Departments of Anatomy, Biochemistry, Biostatistics, Human Genetics, Microbiology and Immunology, Pathology, Pharmacology and Toxicology, Pharmacy and Phar-

maceutics, Pharmaceutical Chemistry, and Physiology and Biophysics.

2. A minimum of 24 semester hours is required, exclusive of research credits. In practice, it is found that two years of study usually are necessary to complete the requirements. A time limit of five calendar years, beginning at the time of first registration, is placed on work to be credited toward the Master of Science degree. As many as 12 semester hours credit may be given for work previously completed, upon recommendation of the student's advisory committee with concurrence by the chairman of the MCV Graduate Committee.
3. Each department, at its own discretion, may stipulate one foreign language requirement for the master's degree. It is strongly recommended that students satisfy the foreign language requirement as soon as possible after beginning the program. Students must do so at least two months before submission of the thesis.
4. Each student conducts a research study under the guidance of his/her advisor. This study is reported in a thesis, prepared in acceptable form and style. On approval of the thesis by the advisor, the student submits a copy to each member of the advisory committee.
5. The thesis is examined by the student's advisory committee members, who shall decide upon its acceptability. The committee members may confer with one another before making their decision. Each committee member shall report to the chairman of the MCV Graduate Committee through the student's advisor when the thesis is acceptable for defense. The thesis is approved only if accepted unanimously.
6. On approval of the thesis, the student appears for a final oral examination administered by the student's advisory committee. The chairman of the MCV Graduate Committee, or an appointee, serves as chairman of the

examination committee. Final examination shall be open to the faculty, and its time and place (together with the candidate's name, department, and title of thesis) shall be announced at least ten days in advance.

7. The final examination of an M.S. candidate includes the subject matter of course work as well as the thesis. A favorable vote, with no more than one negative vote, is required for the candidate to pass the examination. Only members of the student's advisory committee and the examiner appointed by the chairman of the MCV Graduate Committee shall vote. The chairman of the MCV Graduate Committee, or a faculty representative, will attend all oral examinations and will cast a vote. No examiner may abstain from voting.
8. The candidate, having fulfilled all the requirements for the degree of Master of Science, is recommended by the dean to the president for the degree.

DOCTOR OF PHILOSOPHY

1. Advanced graduate study leading to the Doctor of Philosophy degree is offered in the Departments of Anatomy, Biochemistry, Biostatistics, Human Genetics, Microbiology and Immunology, Pathology, Pharmaceutical Chemistry, Pharmacy and Pharmaceutics, Pharmacology and Toxicology, and Physiology and Biophysics.
2. At least two years in residence are required for entering students holding the M.S., M.D., or D.D.S. degrees and at least three years for those entering with the baccalaureate degree only. A time limit of seven calendar years, beginning at the time of first registration, is placed on work to be credited towards the Doctor of Philosophy degree.
3. A student becomes an applicant for the doctorate when admitted as such to graduate studies. No assurance as such is given that the student will become a candidate for the Ph.D. degree until the student has given evidence of superior scholarship.

Admission to Candidacy

Before admission to candidacy for the doctorate, students must have satisfied the (1) language requirements, if applicable; (2) completed required course work; (3) successfully completed the comprehensive examinations; and (4) fulfilled an additional departmental requirement. Students are admitted to candidacy by the chairman of the MCV Graduate Committee upon recommendation of their advisors and advisory committees, with the approval of the major department.

Comprehensive Examinations

1. Upon satisfactory completion of all required, formal course work and successful passing of foreign language examination(s) (if required), the student takes written and oral comprehensive examinations. The written examination is administered by the student's major department. The student's advisory committee may require a minor field of study, in which case the student will also take a written comprehensive examination given by that department. In the event of failure in the written comprehensive examination in the major or minor department, the student, with the approval of the MCV Graduate Committee, may be permitted to repeat the written examination in the department in which the failure occurred.
2. After successfully passing the written examination(s), the student will take the oral portion within one month. This examination is conducted by the student's advisory committee. A favorable vote of the advisory committee with no more than one negative vote (all members being required to vote) shall be required to pass the oral portion of the comprehensive examination. The chairman of the MCV Graduate Committee or a faculty member representing the chairman will chair the oral examination and will cast a vote.
3. If a student passes the written comprehensive examination, but fails the oral part, the student may be re-examined only in the oral part with the approval of the MCV Graduate Committee.
4. The oral comprehensive examination is open to all members of the faculty. Faculty members in attendance may ask questions of the candidate, but their questions shall not be presented until after the advisory committee has completed its questions. Faculty members other than those on the advisory committee shall not vote on the success or failure of the candidate. The time and place of the examinations shall be posted at least ten days in advance.
5. The examination must be successfully completed at least six months before submission of the dissertation.

Dissertation Research

1. The student must conduct a substantial original investigation under the supervision of the advisor and prepare a dissertation reporting the results of this research and analyzing its significance in relation to existing scientific knowledge.
2. When the dissertation has been completed, five copies, or more as required, in acceptable form and style are submitted to the members of the advisory committee. The committee members decide upon the acceptability of the candidate's thesis. A favorable unanimous vote is required to approve the dissertation and all examiners are required to vote.
3. If the advisory committee accepts the dissertation for defense, the candidate appears before them for a final oral examination. This examination is open to all members of the faculty. The final oral examination will be limited to the subject of the candidate's dissertation and related matters. A favorable vote of the candidate's advisory committee and no more than one negative vote, shall be required for passing the final oral examination. All committee members must vote. There shall be announcement of the candidate's name, department, and title of dissertation,

together with the day, place, and hour of the final oral examination at least ten days in advance.

nouncement of the candidate's name, department, and title of dissertation, together with the day, place, and hour of the final oral examination at least seven days in advance.

4. The candidate, having fulfilled all of the requirements for the degree of Doctor of Philosophy, is recommended by the graduate dean to the president for the degree.

SPECIAL STUDENTS

Upon recommendation of the department, the chairman of the MCV Graduate Committee may admit for individual courses students who are not candidates for a degree. Students must obtain permission from the instructor before being allowed to register. Special students who carry full-time employment will be limited to one course per semester, usually about three or four semester hours credit.

SUMMER REGISTRATION

Graduate students are expected to devote ten or more weeks during the summer to fulltime research. Students registered for research credit are billed at the established tuition rate.

TRAINING AS A TEACHER

Currently there is increased emphasis on competence as a teacher as well as an investigator for faculty members of colleges, universities, and professional schools. In addition to practical experience, laboratory teaching, and lecturing, students should give consideration to courses offered by the School of Education concerning learning theory, instructional strategy, and educational technology in adult education.

A complete listing of courses available in education are listed in this bulletin.

COMBINED M.S./PH.D AND M.D. OR D.D.S. DEGREE PROGRAMS

Many future physicians and dentists, especially those interested in academic and research careers, need to start in-depth training in research while still in school or

residency training. This need can be effectively met by completing the requirements for the M.S. or Ph.D. degree concurrently with the study of medicine or dentistry. The MCV/VCU medical and dental curricula, with free time for elective courses and research, provide an excellent opportunity for interested students to enter a combined M.S./Ph.D.-M.D. or D.D.S. program.

Admission of medical and dental students regularly enrolled in these schools to this combined degree program is processed through the office of the dean of the School of Basic Sciences by established procedures. The Medical College Admission Test or Dental Aptitude Test is accepted in lieu of the Graduate Record Examination. Undergraduate transcripts and references are obtained from the professional school. No application fee is required since students are already regularly enrolled in a school of the university.

The requirements for a combined professional school/graduate school degree in basic sciences are equivalent to those required of students seeking a graduate degree alone and are determined by the individual department. One of the advisory committee members is the student's professional school advisor.

The minimum graduate residence requirement is one year for the M.S. and two years for the Ph.D. degree. Twenty-four weeks of graduate work (two summers) will be considered equivalent to one year of residence. A time limit of five calendar years for the M.S. and seven calendar years for the Ph.D. degree, beginning at the time of first registration in the graduate school, applies to work to be credited toward degrees for students in combined programs.

DEPARTMENTAL RESEARCH INTERESTS

The graduate course offerings and the list of graduate faculty for each department offering graduate work under the administration of the chairman of the MCV Graduate Committee are given in the appropriate school sections of this bulletin. The pages on which these may be found and brief statements of the research interests of the faculties of the departments follow:

SCHOOL OF BASIC SCIENCES— RESEARCH INTERESTS

1. Department of Anatomy page 120

Research Interests: ultrastructural studies of ovary, uterus, and placenta; maternal accommodations to implantation; experimental embryology; teratological aspects of drug metabolism; control of corpus luteal life span; comparative neuroanatomy and CNS connectivity; neuroendocrinology; anatomical substratum of analgesia; structural and functional studies of the cerebral vasculature and CNS trauma; neuroanatomy and neurophysiology of eye movement; eye differentiation; synaptology; maturation in central nervous system; renal transplantation rejection; ontogeny of the immune system; immunohematology; immune dysfunction and malignancy; and carcinogenesis.

2. Department of Biochemistry page 121

Research Interests: enzyme chemistry; cellular control mechanisms; protein structure and function; macromolecular structure; genetic control of development and differentiation; nuclear proteins; mechanism of hormone action; neurochemistry; intracellular protein catabolism; protein and nucleic acid metabolism; steroid and phospholipid function; spectroscopy; X-ray crystallography and other aspects of physical biochemistry.

3. Department of Biostatistics page 122

Research interests: response surface applications to cancer treatment; correlation analysis and sequential analysis; multivariate analysis; statistical analysis of toxicology studies; multidimensional scaling; linear models; statistical analysis of clinical trials; epidemiological and demographic research; applications of bayesian statistics to the medical sciences; time series analysis and automatic classification of evoked potential elicited from severe head trauma patients.

4. Department of Human Genetics page 123

Research Interests: human cytogenetics and somatic cell genetics; biochemical and molecular genetics; human population, quantitative and behavior genetics; clinical genetics including studies of counseling, twins, metabolic and neurosensory disorders.

5. Department of Microbiology and Immunology page 124

Research Interests: microbial biochemistry, ecology, genetics and physiology; molecular biology; biophysical characterization of biological macromolecules; genetic mechanisms and regulation of prokaryotic and eukaryotic cells; membrane transport; cellular differentiation; X-ray crystallography; immunobiology; immunotoxicology; immunopotentiality; host-parasite interactions; animal virology; mycology; medical bacteriology; cellular oncology; cellular and tumor immunology; cancer chemotherapy; antibiotics and chemotherapy.

6. Department of Pharmacology and Toxicology page 126

Research Interests: Drug metabolism; pharmacodynamics; psychopharmacology; cardiovascular pharmacology; clinical pharmacology; toxicology; drug evaluation; and biochemical and central nervous system pharmacology.

7. Department of Physiology and Biophysics page 129

Research Interests: Motor and sensory systems; behavior; endocrine regulation of reproduction and thyroid systems; gastrointestinal secretory systems; oxygen transport and delivery systems; topics in general physiology including mechanisms of solute transport in epithelial and synthetic membrane systems; and excitation-contraction coupling in cardiac, skeletal, and smooth muscle; effects of ionizing and nonionizing radiation on the eye and other organs; photobiology.

School of Medicine

Department of Pathology page 131

Research Interests: biochemical and clinical applications of enzyme and protein immobilization, clinical enzymology, techniques in clinical chemistry, membranes in the pathogenesis of muscular dystrophy, mechanism of complement activation, oral carcinogenesis, mycoplasma-bacterial interactions, bacterial L-forms, immunohematology, immunotherapy of cancer, cerebral microcirculation, blood substitutes, leukemia, sickle cell disease, trace metal metabolism in tumors, drug distribution, diagnostic immunoassays, inflammation, fever, neuro-chemistry and ultrastructure of brain, infectious diseases, paleopathology, and diagnostic virology.

School of Pharmacy

1. Department of Pharmaceutical Chemistry page 238

Research Interests: synthesis and biological evaluation of new compounds, determination of relationships between chemical structure and biological activity, studies on modes of drug action, theoretical studies on structure-activity relationships of drugs including the use of molecular orbital theory and molecular connectivity, rational design of new drugs, studies on drug metabolism. Drug classes under investigation include antineoplastics, hypocholesteremics, hypoglycemics, hypotensives, neurotransmitters, antagonists, peptide antibiotics, psychotropic agents, urolithiasis inhibitors.

2. Department of Pharmacy and Pharmaceutics page 239

Research Interests: bioavailability studies, factors governing release of drugs from solid dosage forms, micellar nature of drug solutions, drug-protein binding interactions, effects of saturated and competitive metabolism on pharmacokinetics, clinical pharmacokinetics including computer modeling of pharmacokinetics in man and use of individual pharmacokinetic parameters in optimizing dosage regimens, development of analytical methodology for drugs in biological fluids, isolation of new drugs from natural sources, design and management of pharmacy-related health service systems, drug prescribing and utilization studies.

INTEGRATED CURRICULUM— SCHOOL OF MEDICINE

All basic sciences departments are involved in teaching the integrated curriculum in the School of Medicine. *Lectures, conferences, and laboratories* are offered during the M-I year, principally by the Departments

of Anatomy, Biochemistry, Biostatistics, Genetics, and Physiology. Microbiology and pharmacology are taught mainly in the M-II year. In addition, the basic sciences departments offer electives which are available to medical students throughout their curricula but primarily in the fourth year.

INTERDEPARTMENTAL BASIC SCIENCES COURSES

Certain courses are taught by two or more departments.

BIC550-MIC551. Basic Science Core Curriculum for Postgraduate Dental Students. 3 lecture hours. 3-3 credits. I and II. This course is designed to provide the postgraduate dental student with the educational experience in the basic science required for the successful completion of his/her specialty training program. Selected lectures in the basic science areas related to dentistry are presented and are supplemented by assigned articles.

Department of Anatomy (ANA)

FACULTY

- Astruc, Juan A. *Professor* M.D., Ph.D., University of Granada; neurobiology: cerebrocortical projections.
- Craig, Shirley S. *Assistant Professor* Ph.D., Virginia Commonwealth University; reproductive biology: aging.
- East, James M. *Assistant Professor* Ph.D., Jefferson Medical College; reproductive biology: in vitro fertilization.
- Goldberg, Stephen J. *Associate Professor* Ph.D., Clark University; neurobiology: cranial nerve motor unit physiology.
- Haar, Jack L. *Associate Professor* Ph.D., Ohio State University; immunobiology: differentiation of thymocytes.
- Harris, Thomas M. *Professor* Ph.D., University of North Carolina; developmental biology: the eye.
- Jackson, Caroline G. *Assistant Professor* Ph.D., Virginia Commonwealth University; developmental biology: the eye.
- Johnson, James H. *Professor* Ph.D., University of California-Los Angeles; reproductive biology: hypothalamic control mechanisms.
- Jollie, William P. *Professor and Chairman* Ph.D., Harvard University; reproductive biology: placental transport mechanisms.
- Krieg, Richard J., Jr., *Associate Professor* Ph.D., University of California-Los Angeles; reproductive biology: hypothalamic control mechanisms.
- Leichnetz, George R. *Associate Professor* Ph.D., Ohio State University; neurobiology: visuocortical connections.
- McClung, J. Ross *Assistant Professor* Ph.D., University of Texas-Galveston; neurobiology: cranial nerve motor unit anatomy.
- Merchant, Randall E. *Assistant Professor* Ph.D.,

- University of North Dakota; immunobiology: culture of tumor stem cells.
- Mong, Franz S.F. *Assistant Professor* Ph.D., University of Michigan; developmental biology: muscle regeneration.
- Owers, Noel O. *Associate Professor* Ph.D., Nagpur University; developmental biology; enzyme histochemistry.
- Povlishock, John T. *Professor* Ph.D., St. Louis University; neurobiology: mechanical brain injury.
- Ouattropiani, Steven L. *Associate Professor* Ph.D., University of Massachusetts, Amherst; reproductive biology: ovarian follicular differentiation.
- Seibel, Hugo R. *Professor* Ph.D., University of Rochester; reproductive biology: the pineal organ.
- Sholley, Milton M. *Associate Professor* Ph.D., Temple University; developmental biology: endothelial proliferation.
- Spencer, Robert F. *Associate Professor* Ph.D., University of Rochester; neurobiology: control of eye movement.
- Stevenson, James A. *Assistant Professor* Ph.D., Dalhousie University; neurobiology: development of the visual system.
- Szkal, Andras K. *Associate Professor* Ph.D., University of Tennessee; immunobiology: differentiation of macrophages.

A few 400 level courses (ANA 401, 402, 403, 405) have been approved for selected students to apply towards this degree. Permission is required from advisors to register for these undergraduate courses.

501 Gross Anatomy (Dentistry). 4.5 lecture and 8 laboratory hours. 8.5 credits. I. A systematic dissection and study of the human body with clinical correlation and emphasis on the head and neck.

502 Microscopic Anatomy (Dentistry). 3 lecture and 6 laboratory hours. 6 credits. I. A study of the normal tissues and organs of the human body at the microscopic level, with emphasis on the histological organization and development of the oral cavity.

503 Neuroanatomy (Dentistry). 1.5 lecture hours. 1.5 credits. I. This course provides the student with a wide exposure to the field of neuroanatomy. The structure and connections of the brain and spinal cord are stressed so that the student is prepared to deal with physiological, pharmacological, and clinical aspects presented in other courses.

609 Gross Anatomy. 3 lecture and 18 laboratory hours. 12 credits. I. A graduate level, in-depth study of human anatomy at the gross level. Though intended primarily for graduate students in anatomy, this course will prove useful for all graduate students desiring a thorough knowledge of human gross anatomy.

610 Neuroanatomy. 4 lecture and 4 laboratory hours. 6 credits. II. An in-depth study of the structure, connections and function of the central nervous system. The laboratory sessions complement lecture presentations through the use of actual gross brain and histological materials, and expose the student to current neuroscience literature.

613 Advanced Studies in Anatomy. 3 lecture and 6 laboratory hours. 6 credits. An in-depth course in specific areas of anatomy: histology, gross anatomy, and neuroanatomy.

614 Microscopic Anatomy. 3 lecture and 6 laboratory hours. 6 credits. II. A graduate-level, in-depth study of human anatomy at microscopic and fine structural levels.

616 Techniques in Electron Microscopy. 2 lecture and 6 laboratory hours. 5 credits. II. Prerequisite: ANA 501. Students are taught the basic techniques and theories of ultramicrotomy and electron micrography, as well as the use of the electron microscope.

690 Anatomy Seminar. 1 lecture hour. 1 credit. I, II. This course is a joint effort by the faculty and graduate students of the Department of Anatomy. Reviews and reports of original research and significant advances in the basic medical sciences are submitted.

697 Research in Anatomy. 1—15 credits. I, II, S.

Department of Biochemistry (BIC)

FACULTY

Banks, William L., Jr. *Professor* Ph.D., Rutgers University; cancer, protein and nucleic acid metabolism, protein nutrition.

Bond, Judith S. *Associate Professor* Ph.D., Rutgers University; intracellular protein degradation.

Brandt, Richard B. *Associate Professor* Ph.D., New York University; glyoxalase enzyme system in cancer.

Chlebowski, Jan F. *Assistant Professor* Ph.D., Case Western Reserve University; biosynthesis and regulation of enzyme structure and function.

Collins, James M. *Professor* Ph.D., University of Tennessee; biochemistry of cell cycle, DNA synthesis.

DeVries, George H. *Associate Professor* Ph.D., University of Illinois; metabolism and composition of neurons and axons isolated from mammalian CNS.

Evans, Herbert J. *Assistant Professor* Ph.D., Case Western Reserve University; biochemistry of hemostasis.

Franson, Richard *Associate Professor* Ph.D., Bowman Gray School of Medicine; biochemistry.

Grogan, W. McLean *Assistant Professor* Ph.D., Purdue University; lipid metabolism in differentiation and transformation.

Higgins, Edwin S. *Professor* Ph.D., State University of New York Upstate Medical Center; electron transport and mitochondrial function.

Kline, Edward S. *Associate Professor* Ph.D., George Washington University; metabolic effect of ethanol, control of protein synthesis.

Liberti, Joseph P. *Professor* Ph.D., Loyola University, Chicago; mechanism of hormone action, regulation of translation.

Martinez-Carrion, Marino *Professor and Chairman* Ph.D., University of California, Berkeley; mechanisms of enzyme action, neuroreceptors.

Peterson, Darrell L. *Assistant Professor* Ph.D., University of Notre Dame; structure of hepatitis B surface antigen proteins.

Rogers, Kenneth S. *Professor* Ph.D., Purdue University; proteins and enzyme chemistry.

Schirch, LaVerne G. *Associate Professor* Ph.D., University of Michigan; properties of enzymes involved in one-carbon metabolism.

Shaw, J. Michael *Assistant Professor* Ph.D., Temple University; distribution and transmembrane movement of phospholipids and/or cholesterol in the lipid bilayers.

Shelton, Keith R. *Associate Professor* Ph.D., University of Illinois; nuclear acidic proteins, membrane proteins.

Van Tuyle, Glenn C. *Associate Professor* Ph.D., Thomas Jefferson University; mitochondrial DNA and protein synthesis, DNA packaging.

Wright, H. Tonie *Assistant Professor* Ph.D., University of California, San Diego; protein and nucleic acid structure by x-ray crystallography.

Zehner, Zandra E. *Assistant Professor* Ph.D., Baylor College of Medicine; regulatory signals governing gene expression.

A few 400 level courses (BIC 402, 404) have been approved for select students to apply towards this degree. Permission is required from advisors to register for these undergraduate courses.

501 Biochemistry (Dentistry). 4 lecture and 2 laboratory hours. 5.5 credits. I. Prerequisite: organic chemistry, three credits of physical chemistry, or permission of instructor. A presentation of structural biochemistry, intermediary metabolism, physiological chemistry, and nutrition as part of the fundamental background of modern dentistry.

503-504 General Biochemistry. 3 lecture hours. 3 credits. I and II. Prerequisite: eight credits of organic chemistry. Both semesters are required for the comprehensive introductory course for graduate students. BIC 503 is prerequisite for BIC 504.

505-506 Experimental Biochemistry. 4 laboratory hours. 2 credits. I and II. Prerequisite: BIC 503 (or concurrent) or equivalent, quantitative chemistry. Laboratory work, including theory and practice of advanced biochemical research methods.

601 Lipids. 3 lecture hours. 3 credits. I. (Alt. yrs. '83-'84.) Prerequisite: BIC 503-504. Chemical basis of lipid structure determination and analysis. Treatment of methods for the analysis of lipid structures, micelles, membranes, and lipoproteins. Selected topics of lipid metabolism.

602 Physical Properties of Macromolecules. 3 lecture hours. 3 credits. II. Prerequisite: BIC 503-504 and physical chemistry. Physico-chemical approaches to the determination of the structure and conformation of macromolecules.

603 Nutritional Biochemistry. 3 lecture hours. 3 credits. I. (Alt. yrs. '84-'85.) Prerequisite: permission of instructor. Study of chemistry and mechanisms of vitamins and functions of essential elements. Experimental and practical aspects of nutrition.

604 Enzymology. 3 lecture hours. 3 credits. Prerequisite: BIC 503-504. Physical and chemical properties and mechanisms of action of enzymes. Treatment of chemical catalysis, enzyme kinetics, and correlation of enzyme structure to mechanisms.

605 Molecular Biology. 4 lecture hours. 4 credits. Prerequisite: undergraduate biology and/or chemistry. Chemistry of nucleic acids; protein synthesis; molecular genetics and control; membrane biophysics; molecular basis of disease.

606 Biochemical Control Processes. 3 lecture hours. 3 credits. I. (Alt. yrs. '84-'85.) Prerequisite: BIC 503-504 and permission of instructor. An advanced course on aspects of control mechanisms at the molecular level.

610 Current Trends in Biochemistry. 2 lecture hours. 2 credits. I, II. Prerequisite: BIC 503-504. A study and literature review of common and complex biochemical substances using recent research methodology.

690 Biochemistry Seminar. 1 credit. I, II. Reports on recent biochemical literature and research by students and staff.

697 Research in Biochemistry. 1-15 credits. I, II, S. Research leading to the M.S. or Ph.D. degree and elective research projects for students in the professional schools.

Department of Biostatistics (BIS)

FACULTY

Carter, Walter H., Jr. *Professor* Ph.D., Virginia Polytechnic Institute and State University; response surface applications to cancer treatment.

Chinchilli, Vernon M. *Assistant Professor* Ph.D., University of North Carolina, Chapel Hill; multivariate analysis, clinical trials and biomedical research, analysis of toxicology studies.

Choi, Sung C. *Professor* Ph.D., University of California; correlation analysis; sequential analysis.

Hamer, Robert M. *Assistant Professor (Psychiatry)* Ph.D., University of North Carolina, Chapel Hill; multidimensional scaling, linear models, statistical analysis of clinical trials.

Kilpatrick, S. James, Jr. *Professor and Chairman* Ph.D., The Queen's University of Belfast; statistical, epidemiological and demographic research.

Minton, Paul D. *Professor (Mathematical Sciences; Institute of Statistics, Director)* Ph.D., North Carolina State University; distribution theory and applications in medical research.

Adjunct: Flora.

A few 400 level courses in statistics have been approved to apply toward this degree. Permission is required to register for these courses. Courses in biostatistics may not normally be repeated for credit.

511-512 Methods of Biostatistical Analysis. 3 lecture hours. 3 credits. (This is a two-semester sequence; however, BIS 511 may be taken without taking BIS 512.) Basic concepts of statistical methods, statistical measures, variation, distributions, tests of significance, simple nonparametric tests, analysis of variance, concepts of experimental design, regression, correlation; analysis and design of factorial experiments, Latin squares, and others; effects of blocking fractional replication, and confounding.

515 Biostatistical Data Management. 1 lecture hour. 1 credit. I. Concepts of data management are dealt with. Methods of data collection, editing, and validation are reviewed. Importance of data file arrangement and maintenance is addressed. Research protocols are critically reviewed.

516 Biostatistical Consulting. 1 lecture hour. 1 credit. II. The principles dealing with the basic art and concepts of consulting in biostatistics. The non-statistical course discusses role, responsibilities of biostatisticians, relationship between clients and consultants, method of writing reports, etc.

521 Biostatistical Principles of Health Care Information. 3 lecture hours. 3 credits. I. (For graduate students in nursing and physical therapy; others with consent.) A basic introduction to the nature, use, and analysis of hospital and health-care statistics. The collection, presentation, tabulation, and interpretation of statistical data. Classification of measurements and observations, properties of rates, ratios, and indices. Some typical statistical distributions. The use of measure of location and dispersion to describe a distribution. 'Normal' variation and outliers. The elementary laws of probability. The concept of a sampling distribution, the standard error of the mean and confidence limits in large and small samples, and tests of significance.

524 Biostatistical Computing. 3 lecture hours. 3 credits. II. Prerequisite: BIS 511, 521, or equivalent. The Statistical Analysis System (SAS) is both a powerful computer language and a large collection of statistical procedures. Students will learn how to create and manage computer data files. Techniques for thorough examination and validation of research data will be presented as the initial step of a complete, computerized analysis. Descriptive statistics will be computed and statistical procedures such as t-tests, contingency tables, correlation, regression, and analysis of variance then applied to the data. Special attention will be paid to the applicability of each procedure. Students will be encouraged to analyze their own or typical data from their discipline.

530(S) Elements of Biometry. 5 lecture hours weekly during July. 2 credits. (For dental and medical fellows; graduate students with consent.) Concepts of biostatistics and epidemiology. Summary statistics and tables. Normal distribution and statistical association. Chi-square tests, t-tests, Wilcoxon test, and other tests. Sensitivity, specificity, odds ratios, and related topics. Clinical trials, prospective and retrospective studies, and other miscellaneous topics in biostatistics and epidemiology.

537 Sampling. 3 lecture hours. 3 credits. I. (Alt. yrs. '84-'85.) An introduction to the theory and methods of

¹Department in parentheses indicates joint appointment.

sampling and sample surveys including random, stratified, systematic, and probability sampling, estimation of sample sizes, ratio and regression estimates, and analytical survey.

538 Epidemiology and Population Research. 3 lecture hours. 3 credits. I. (Alt. yrs. '83-'84) Sources of vital statistical data—review of the binomial, Poisson, negative binomial distributions as they apply to vital events; summary statistics, rates, ratios, and others; direct and indirect standardization; abridged life tables; principles of epidemiology; interpretation of analytical surveys; problems in the analysis of observational studies in health care and public health; causality; inferences; path analysis; modeling; and crucial observations.

541-542 Theory of Probability and Biostatistical Inference. 3 lecture hours. 3 credits. (This is a two-semester sequence. However, BIS 541 may be taken without taking BIS 542.) Discrete and continuous probability distributions, moment generating functions and change of variables; limit theorems and laws of large numbers; Bayesian, maximum likelihood, and estimators; Neyman-Pearson and likelihood ratio criteria for testing simple and composite hypotheses.

546 Linear Biostatistical Models. 3 lecture hours. 3 credits. II. Prerequisite: STA 513. Distribution of quadratic forms under normal theory; general linear model of full rank and less than full rank, Gauss-Markov theorem; estimability.

547 Nonparametric Statistics. 3 lecture hours. 3 credits. I. (Alt. yrs. '83-'84.) Theory of distribution-free and order statistics with emphasis on estimation and hypothesis testing.

590 Biostatistics Seminar. 1 lecture hour. 1 credit. I, II. Talks by the students, faculty, and visitors describing recent research or reviewing topics of mutual interest.

641 Advanced Biostatistical Inference. 3 lecture hours. 3 credits. I (Alt. yrs. '84-'85). Prerequisite: STA 514. Concepts of classical decision theory, the Bayesian approach to decision theory, the use of prior information in arriving at decision procedures, empirical Bayesian tests of hypotheses, estimation of parameters, and other applications. In the second half of this course, the theories of estimation and hypothesis testing introduced in STA 514 will be extended.

642 Methods of Multivariate Analysis. 3 lecture hours. 3 credits. II. (Alt. yrs. '83-'84.) Prerequisite: BIS 511, 546. Introduction to the theory and methods of analysis of multivariate data; generalization of standard univariate techniques to the multivariate, union/intersection, and likelihood ratio tests; multiple, partial, and canonical correlation; principle component analysis; discriminant analysis.

650 Design and Analysis of Response Surface Experiments. 3 lecture hours. 3 credits. II. (Alt. yrs. '83-'84.) Prerequisite: BIS 511 and 546. Philosophy, terminology, and nomenclature for response surface methodology, analysis in the vicinity of the stationary point, canonical analyses, description of the response surfaces, rotatability, uniform information designs, central composite in design, and modern design criteria.

691 Special Topics in Biostatistics. Lecture and laboratory hours by arrangement. 1-4 credits. I, II. The faculty (including visiting and adjunct professors) from time to time offer courses in newly developing areas of statistics and biometry. For information, contact the department secretary.

697 Research in Biostatistics. 1-15 credits. I, II, S. For additional related courses, see offerings in mathematical sciences and statistics on the Academic Campus.

Department of Human Genetics (GEN)

FACULTY

Brown, Judith A. *Professor (Obstetrics and Gynecology)*¹ Ph.D., Indiana University; cytogenetics.

Chinnici, Joseph P. *Associate Professor (Biology)*¹ Ph.D., University of Virginia; population genetics.

Corey, Linda J. *Associate Professor* Ph.D., North Carolina State University; biochemical genetics.

Eaves, Linton J. *Distinguished Professor* Ph.D., D.Sc., University of Birmingham; behavior and quantitative genetics.

Flannery, David B. *Instructor (Pediatrics)*¹ M.D., Emory University School of Medicine; clinical genetics.

Holmes, W. Michael *Associate Professor (Microbiology and Immunology)*¹ Ph.D., University of Tennessee; molecular genetics, nucleic acid chemistry.

Merz, Timothy *Professor (Division of Radiobiology, Chairman)*¹ Ph.D., Johns Hopkins University; cytogenetics.

Nance, Walter E. *Professor and Chairman (Pediatrics)*¹ M.D., Ph.D., University of Wisconsin; population genetics.

Redwine, Fay O. *Assistant Professor (Obstetrics and Gynecology)*¹ M.D., Medical College of Virginia of Virginia Commonwealth University; biochemical genetics.

Rizzo, William B. *Assistant Professor (Pediatrics)*¹ M.D., University of Illinois, College of Medicine; endocrinology.

Townsend, J. Ives *Associate Professor* Ph.D., Columbia University; population genetics.

Wolf, Barry *Associate Professor (Pediatrics)*¹ M.D., Ph.D., University of Illinois College of Medicine; biochemical genetics.

501 Introduction to Human Genetics. 3 lecture hours. 3 credits. I. An introductory course in the principles of inheritance with particular reference to genetic variation in man.

502 Advanced Human Genetics. 2-6 lecture hours. 2-6 credits. I and II. Prerequisite: GEN 501 or equivalent. A comprehensive study of the principles of human genetics, including lectures on cytogenetics, biochemical genetics, population and quantitative genetics. Each

¹Department in parentheses indicates joint appointment.

unit is well defined and can be taken separately for variable credit.

504 Biochemical Genetics. 3 lecture hours. 3 credits. II. Prerequisite: biochemistry. Mechanisms of gene action as illustrated by inherited biochemical defects in man.

511 Human Cytogenetics. 3 lecture hours. 3 credits. II. Prerequisites: GEN 501 and GEN 502 I and II. A seminar format is used to discuss the recent advances in cytogenetics. Student participation will be through classroom discussion and informal presentations taken from the literature. Clinical cases are used to illustrate the application of special diagnostic methodologies.

516 Population Genetics. 3 lecture hours. 3 credits. II. Genetic and ecological factors affecting normal and abnormal variation within and between populations of organisms, especially man.

518 Methods in Human Population Genetics. 3 lecture hours. 3 credits. I. Data analysis and discussion of methods including segregation analysis and linkage. Topics covered will include inbreeding, ascertainment, and genetic epidemiology.

519 Quantitative Genetics. 3 lecture hours. 3 credits. II. Methods of analysis of quantitative traits in families and populations.

520 Principles of Human Behavioral Genetics. 3 lecture hours. 3 credits. I and II. The theory of genetic and non-genetic transmission considered in relation to the design, analysis, and interpretation of studies to identify the principal genetic and environmental causes of behavioral variation. Included will be analysis of intelligence, personality, social attitudes and psychiatric disorders.

531 Dental Genetics. 1 lecture hour. 1 credit. I. The basis of inheritance and variation in man, including simple and complex modes of inheritance, the nature of mutations, human chromosomal aberrations, variation in proteins and antigens, genetic aspects of some syndromes, and birth defects.

590 Genetics Seminar. 1 lecture hour. 1 credit. I and II. Selected topics in genetics presented by students and staff.

600 Clinical Genetics. 1 lecture and 2 laboratory hours. 2 credits. I and II. Prerequisite: GEN 501 or equivalent. Practical experience in the genetic counseling clinic and on ward rounds. Includes collection and analysis of family histories, genetic counseling, and introduction to genetic nosology.

691 Special Topics in Genetics. 1-4 credits. I and II. Lectures, tutorial studies, library assignments in selected areas of advanced study, or specialized laboratory procedures, not available in other courses or as part of the research training.

697 Genetics Research. 1-15 credits. I, II, S. Research leading to the M.S. or Ph.D. degree; elective research projects for students in the professional schools.

Department of Microbiology and Immunology(MIC)

FACULTY

- Adler, Stuart P. *Assistant Professor (Pediatrics)*¹ M.D., Johns Hopkins University; animal virology, viral tumorigenesis, and persistence.
- Archer, Gordon L. *Associate Professor (Medicine)*¹ M.D., University of Virginia; staphylococcal genetics, virulence factors in *Staphylococcus epidermidis*, prosthetic valve endocarditis.
- Bick, Peter H. *Assistant Professor* Ph.D., University of Michigan; cellular interactions and regulation of immunological systems.
- Berliner, Martha D. *Professor (Biology, Chairman)*¹ Ph.D., Columbia University; cell biology of fungi and algae.
- Bradley, S. Gaylen *Professor (Pharmacology and Toxicology; Dean, School of Basic Sciences)*¹ Ph.D., Northwestern University; regulation of microbial metabolism, biology of the actinomycetes, biology of *Naegleria*, cellular and molecular bases of microbial pathogenesis, microbial toxins and drug interactions.
- Cabral, Guy A. *Assistant Professor* Ph.D., University of Connecticut; viral oncology (herpes virus); Non-A, Non-B hepatitis.
- Coleman, Philip H. *Professor and Interim Chairman (Division of Animal Resources, Director)*¹ D.V.M., University of Georgia; Ph.D., University of Wisconsin; zoonoses research.
- Cross, Sue S. *Assistant Professor (Pathology)*¹ Ph.D., George Washington University; immunoregulatory effects of thymic virus, immunology of oncogenic virus, host versus graft disease.
- Dalton, Harry P. *Professor (Clinical Pathology)*¹ Ph.D., University of Massachusetts; clinical microbiology, including bacterial L forms, mycoplasma, and nosocomial infections.
- Duma, Richard *Professor (Medicine; Pathology; Division of Infectious Disease, Chairman)*¹ M.D., University of Virginia; Ph.D., Virginia Commonwealth University; amoebic, mycologic, and streptococcal infections, chemotherapeutic agents, nosocomial infections.
- Elson, Charles O. *Associate Professor (Medicine)*¹ M.D., Washington University; gastrointestinal immunology, T cell regulation of immunoglobulin synthesis in patients with inflammatory bowel disease.
- Fisher, Robert W., Jr. *Associate Professor (Biology)*¹ Ph.D., Syracuse University; developmental biology of cyanobacteria and the *Azolla-Anabaena* association, photomorphogenesis in cyanobacteria and fern gametophytes, the effects of cell division on growth and development, nitrogen fixation and the application of biological nitrogen-fixation systems to agriculture plant tissue culture, and gene manipulation.
- Formica, Joseph V. *Associate Professor* Ph.D., Georgetown University; microbial biochemistry,

¹Department in parentheses indicates joint appointment.

- chemotherapy, biogenesis of secondary metabolites.
- Gates, James E. *Associate Professor (Biology)*¹ Ph.D., University of Missouri at Columbia; microbiology and plant pathology.
- Giebel, Peter E. *Assistant Professor (Biology)*¹ Ph.D., University of North Carolina at Chapel Hill; human pathogenic fungi and mechanisms of disease.
- Hall, Robert E. *Assistant Professor (Medicine)*¹ M.D., Harvard Medical School; Ph.D., Harvard University; monocyte cytotoxicity, activated macrophages, mechanism of cytotoxicity, natural cytotoxicity.
- Holmes, W. Michael *Associate Professor* Ph.D., University of Tennessee; molecular genetics of tRNA in metabolic control.
- Hsu, Hsiu-Sheng *Associate Professor* Ph.D., University of Pennsylvania; host-parasite relationships and experimental pathology of infectious diseases.
- Hylemon, Phillip B. *Associate Professor* Ph.D., Virginia Polytechnic Institute and State University; steroid metabolism by intestinal anaerobic bacteria, regulation of cholesterol and bile acid synthesis in hepatocyte monolayer cultures.
- Kaplan, Alan M. *Affiliate Professor (Surgery)*¹ Ph.D., Purdue University; cellular and tumor immunology, cellular bases of immunologic tolerance, macrophage regulation of immunologic function, tumor immunotherapy.
- Keefe, William E. *Associate Professor* Ph.D., Medical College of Virginia; structure of biological macromolecules, X-ray crystallography, crystallographic analysis of renal calculi, quantitative analysis of 2-D electrophoretic patterns.
- Littman, Bruce E. *Associate Professor (Medicine)*¹ Ph.D., State University of New York; regulation of cellular cooperation by lymphokines, immunoregulatory events in connective tissue disorders.
- Loria, Roger M. *Associate Professor (Academic Pathology)*¹ Ph.D., Boston University; host-virus interactions; enteroviruses in diabetes mellitus; cardiovascular diseases and atherosclerosis; role of environmental factors in nutrition, lipids, and pesticides on virus infections.
- Macrina, Francis L. *Associate Professor (Endodontics)*¹ Ph.D., Syracuse University; genetic control of colonization and virulence in human indigenous microflora.
- Madge, Gordon E. *Professor (Pathology)*¹ M.D., University of Maryland; Reye's Syndrome, experimental diabetes mellitus.
- Marciano-Cabral, Francine *Assistant Professor* Ph.D., University of Connecticut; viral oncology, pathogenic protozoa, parasite-host interactions, parasite-immunology.
- Mohanakumar, Thalachallour *Associate Professor (Surgery)*¹ Ph.D., Duke University; tumor and transplantation immunobiology, cell surface antigens and receptors of the human immune organelles, immunoregulation.
- Munson, Albert E. *Associate Professor (Pharmacology and Toxicology)*¹ Ph.D., Medical College of Virginia; cancer chemotherapy, immunotoxicology.
- Murray, Byron K. *Associate Professor* Ph.D., Brigham Young University; molecular virology, viral transformation, viral chemotherapy.
- O'Neal, Charles H. *Associate Professor* Ph.D., Emory University; nucleic acid isolation and characterization; RNA tumor virus isolation and characterization; isolation of proteins and nucleic acids involved in cellular transformation; role of tRNA in metabolic control.
- Phibbs, Paul V., Jr. *Associate Professor*, Ph.D., University of Georgia; microbial physiology, regulation of metabolism, membrane transport.
- Regelson, William *Professor (Medicine)*¹ M.D., New York State University College of Medicine, Downstate; the immunological regulation of tumor growth, gerontological research, chemotherapy, and host resistance to both tumor and microbiological disease.
- Ruddy, Shaun *Professor (Medicine; Division of Immunology and Connective Tissue Diseases, Chairman)* M.D., Yale University; cellular interactions with complement and properdin, complement receptors on normal and lymphoblastoid cells.
- Schenkein, Harvey A. *Associate Professor (Periodontics)*¹ D.D.S., M.D., State university of New York at Buffalo; immunobiology of periodontal disease, complement.
- Schook, Lawrence B. *Assistant Professor* Ph.D., Wayne State University; macrophage differentiation, mechanisms of antigen presentation, regulation of *H-2I* gene products (Ia antigen) expression, T cell hybridomas, lymphokines.
- Shadomy, H. Jean *Professor (Medicine, Pathology)*¹ Ph.D., University of California, Los Angeles; medical and veterinary mycology.
- Shadomy, Smith *Professor (Medicine)*¹ Ph.D., University of California; medical microbiology, medical mycology, experimental chemotherapy, infectious diseases.
- Shipley, Patricia *Assistant Professor* Ph.D., University of Michigan; mechanisms of pathogenesis, genetics of bacterial virulence, microbial genetics.
- Susskind, Brian M. *Assistant Professor (Surgery)*¹ Ph.D., Louisiana State University; cellular immunology, immunopharmacology, parasitology.
- Tew, John G. *Professor* Ph.D., Brigham Young University; role of follicular dendritic cells in the immune response and the role of immune mechanisms in the pathogenesis of periodontal disease.
- Welshimer, Herbert J. *Professor* Ph.D., Ohio State University; pathogenic bacteriology, clinical microbiology, listeria.
- White, Kimber L., Jr. *Assistant Professor* Ph.D., Medical College of Virginia, Virginia Commonwealth University; immunotoxicology.

¹Department in parentheses indicates joint appointment.

A few 400 level courses (MIC 401, 465) have been approved for select students to apply towards this degree. Permission is required from advisors to register for these undergraduate courses.

502 Animal Virology. 3 lecture and 4 laboratory hours. 5 credits. II. A comprehensive introduction to animal virology emphasizing the molecular aspects of viral replication, the cellular responses following viral infection, and host viral infection.

504 Biology of Prokaryotic and Eucaryotic Cells. 4 lecture hours. 4 credits. I. Prerequisite: BIC 503 (concurrently or equivalent) or permission of instructor. A comprehensive survey of the biology of prokaryotic and eucaryotic cells including studies of cell composition and structure, growth and cell division, metabolism and its control, membrane structure and function, basic genetic concepts and a comparative review of the major groups of microbes including viruses, bacteria, fungi, algae, and protozoa.

506 Immunobiology. 3 lecture and 4 laboratory hours. 5 credits. II. A survey of immunobiology as a total host response to foreign agents, covering the nature of antigens and antibodies, antigen-antibody reactions, immunocompetent cells, allergic reactions, tumor immunology, transplantation immunology, and immunogenetics. The laboratory is designed to provide students with practical experience, using basic immunologic techniques which may be applicable in research projects and diagnostic laboratories.

507 Medical Mycology. 2 lecture and 4 laboratory hours. 4 credits. I. A comprehensive study of fungi pathogenic to man with an emphasis on their properties, pathogenesis, and laboratory diagnosis.

508 Introduction to Microbiology Research. 1 lecture and 2 laboratory hours. 2 credits. I. Introduction to all active research programs in microbiology. Lectures and practical instruction in the proper use of major pieces of equipment. Required for all first year microbiology graduate students.

510 Medical Parasitology. 2 lecture and 4 laboratory hours. 4 credits. II. An introduction to the animal parasites of man with emphasis on both the biological and the medical aspects of the host-parasite association.

512 Laboratory Safety. 1 lecture hour. 1 credit. I or II. Describes health hazards commonly found in microbiology laboratories and appropriate safety precautions and responses. Includes hazards of working with bacteria, viruses, parasites, fungi, recombinant DNA procedures and regulations, and chemical, electrical, and fire hazards.

513 Infections and Immunity (Dentistry). 3.5 lecture hours lecture and 4 laboratory hours. II. 5.5 credits. A lecture and laboratory study of the disease producing microorganisms of man with special emphasis on the roles of microorganisms in oral diseases and related topics that are of importance in dentistry.

515 Pathogenic Bacteriology. 2 lecture and 4 laboratory hours. 4 credits. I. A survey of the bacteria that cause

infections in man with an emphasis on their properties, pathogenesis, and laboratory diagnosis.

517 Biology of Cancer. 3 lecture hours. 3 credits. I. A goal-oriented presentation of neoplasia pertaining to the cancer cell, tumor host interrelationships, carcinogenesis, immunology of cancer, tumor growth and cell kinetics, common cancer related to age and sex, basic and practical concepts of therapy, and the role of the various medical and paramedical personnel involved in cancer.

590 Microbiology Seminar. 1 lecture hour. 1 credit. I, II. Presentation and discussion of research reports and topics of current interest to the departmental seminar or special group seminar.

604 Cell Physiology and Metabolism. 3 or 5 lecture hours. 3 or 5 credits. II. Prerequisite: MIC 504. An advanced course on the physiology and metabolism of prokaryotic and eucaryotic cells with some emphasis on the regulation of cell functions. Lectures and class discussions will focus on current scientific literature including review articles and original research papers.

653 Molecular Genetics and Gene Expression. 3 lecture hours. 3 credits. Prerequisite: BIC 502-503 and BIO 310 or equivalent, or permission of instructor. Examination of fundamental and current aspects of gene structure, organization, and expression at the molecular level, and both prokaryotic and eucaryotic systems will be viewed from the perspective of the gene. Topics to be covered will include gene organization and fine structure, and current methods of analysis, molecular control mechanisms, the nature of mutation, microbial systems of genetic exchange, bacterial virus genetics, DNA insertion elements, plasmids and transposons, genetic engineering, control of macromolecular synthesis, recent developments in gene overlap, message splicing, and molecular mechanisms of recombination.

685 Advanced Immunobiology. 1-3 lecture hours. 1-3 credits. I. Lectures, seminars, and conferences on basic and clinical immunobiology. Topics have included tumor immunology, cell interactions in the immune response, genetics of the immune response, mechanisms of host-defense and membrane receptors in immunology and neoplasia. Open primarily to residents, medical students, and graduate students with immunology background such as MIC 506.

691 Special Topics in Microbiology. 1-4 credits. I or II. Lectures, tutorial studies, and/or library assignments in selected areas of advanced study not available in other courses or as part of the research training.

697 Research in Microbiology. 1-15 credits. I, II, S. Research leading to the M.S. or Ph.D. degree and elective research projects for other students.

Department of Pharmacology and Toxicology (PMC)

FACULTY

Aceto, Mario D. *Associate Professor* Ph.D., University of Connecticut; mechanisms of action of analgesics and psychotherapeutic agents, drug dependence.

- Balster, Robert L. *Associate Professor* Ph.D., University of Houston; animal models of drug dependence, behavioral pharmacology, behavioral toxicology.
- Blanke, Robert V. *Professor (Pathology; Hospital Toxicology Laboratory, Director)* Ph.D., University of Illinois; analytical toxicology, biological monitoring, trace-metal metabolism.
- Borzelleca, Joseph F. *Professor* Ph.D., Thomas Jefferson University/Jefferson Medical College; movement of chemicals across membranes (testicular, salivary), toxicology, safety evaluation.
- Bradley, S. Gaylen *Professor (Microbiology and Immunology and Dean, School of Basic Sciences)* Ph.D., Northwestern University; host-parasite relations in bacterial and viral diseases.
- Carchman, Richard A. *Associate Professor* Ph.D., State University of New York, Downstate Medical Center; cyclic nucleotide metabolism in malignant transformation, macrophage function, toxicology.
- Chau, Thuy T. *Assistant Professor* Ph.D., University of North Carolina; drugs affecting the central nervous system and their interactions with neurochemical transmitter systems.
- Dewey, William L. *Professor and Associate Dean, School of Basic Sciences; Assistant Dean, School of Graduate Studies* Ph.D., University of Connecticut; mechanism of action of the constituents of marijuana, narcotic analgesics and their antagonists, including the role of endogenous substances in these actions.
- Diasio, Robert B. *Associate Professor (Medicine)* M.D., Yale University; biochemical pharmacology of anticancer agents, specifically pyrimidine antimitabolites.
- Egle, John L., Jr. *Associate Professor* Ph.D., West Virginia University; cardiovascular and respiratory pharmacology and toxicology.
- Ellis, Earl F. *Assistant Professor* Ph.D., Bowman Gray School of Medicine; cardiovascular pharmacology, prostaglandins, microcirculation.
- Fallon, Harold J. *Professor (Medicine; Chairman, Department of Internal Medicine)* M.D., Yale University; liver disease and ethanol effects, lipid metabolism.
- Freer, Richard J. *Professor* Ph.D., Columbia University; synthesis and pharmacology of biologically active polypeptides.
- Gewirtz, David A. *Assistant Professor (Medicine)* Ph.D., Mount Sinai College of Medicine; membrane transport metabolism and secretory functions in rat liver and isolated rat hepatocytes as determinants of antineoplastic drug activity and cytotoxicity.
- Giordano, Anthony M., Jr. *Assistant Professor (Otolaryngology)* M.D., Hahnemann Medical College; Ph.D., University of Rochester; inhalation toxicology, tracheobronchial physiology, biochemical and biophysical analyses of tracheobronchial mucous secretions.
- Goldman, I. David *Professor (Medicine)* M.D., University of Chicago; membrane transport of antineoplastic agents, the role of drug transport in drug action, biochemical pharmacology of antitofates, cytotoxic nucleosides, and bases.
- Guzelian, Philip S. *Professor (Medicine)* M.D., University of Wisconsin; regulation of microsomal hemoproteins and hepatic drug metabolism, control of collagen synthesis in the liver, liver cell culture.
- Harris, Louis S. *Harvey Haag Professor and Chairman* Ph. D., Harvard University; relationship between chemical and biochemical factors and pharmacological actions of drugs affecting the central nervous system.
- Hayes, Johnnie R. *Assistant Professor* Ph.D., Virginia Polytechnic Institute and State University; chemical carcinogenicity, biochemical mechanisms associated with drug metabolism, mycotoxins.
- Jayne, David W. *Assistant Professor (Medicine)* Ph.D., University of Michigan; membrane transport interactions between antineoplastic drugs and natural solutes; genetics of resistance to alkylating agents.
- Lamb, Robert G. *Associate Professor (Medicine)* Ph.D., University of North Carolina; hepatic glycerolipid metabolism, effects of ethanol and hepatotoxins on lipid biosynthesis, mechanism of action of hypolipidemic agents.
- Laychock, Suzanne G. *Assistant Professor* Ph.D., Medical College of Virginia of Virginia Commonwealth University; endocrine regulation, role of cyclic nucleotides, phospholipases, prostaglandins, and calcium in cell biochemistry and hormone production.
- Llewellyn, Gerald C. *Associate Professor (Biology)* Ph.D. Purdue University; mycotoxicology, metal-toxin biointeractions.
- Martin, Billy R. *Associate Professor* Ph.D., University of North Carolina; central nervous system pharmacology, drugs of abuse, drug metabolism.
- May, Everette L. *Professor* Ph.D., University of Virginia; medicinal chemistry, drug abuse.
- Munson, Albert E. *Associate Professor* Ph.D., Medical College of Virginia of Virginia Commonwealth University; immunotoxicology, chemotherapy.
- Musgrave, Gary E. *Research Assistant Professor (Medicine and VA Hospital)* Ph.D. Auburn University; biochemical cardiovascular and autonomic pharmacology.
- Narasimhachari, Nedathur *Professor and Director of Psychopharmacology Laboratory (Psychiatry)* Ph.D., Delhi University; biochemical correlates of schizophrenia and depression, neuropsychopharmacology, studies on mode of action of neuroleptics.
- Patrick, Graham A. *Assistant Professor* Ph.D., University of North Carolina; central nervous system pharmacology and neurotransmitter systems, drugs of abuse.
- Putney, James W., Jr. *Associate Professor* Ph.D., Medical College of Virginia of Virginia Commonwealth University; autonomic receptor mechanisms, stimulus-secretion coupling, phospholipids and ion transport.
- Robinson, Susan E. *Assistant Professor* Ph.D., Vanderbilt University; interactions between

¹Department in parentheses indicates joint appointment.

putative neurotransmitters and central cholinergic neurons, central control of blood pressure.

Rosecrans, John A. *Professor Ph.D.*, University of Rhode Island; psychopharmacology, correlations between the behavioral and biochemical effects on CNS-acting drugs, drug dependence.

Rubin, Ronald P. *Professor Ph.D.*, Albert Einstein College of Medicine; secretory mechanisms, catecholamine and steroid release from the adrenal gland.

Wasserman, Albert J. *Professor (Medicine)* M.D., Medical College of Virginia; clinical pharmacology, cardiovascular pharmacology.

Woods, Lauren A. *Professor and Vice President of Health Sciences Ph.D.*, Iowa State University; M.D., University of Michigan Medical School; narcotic metabolism and distribution.

Wright, Jackson T., Jr. *Assistant Professor (Medicine)* M.D., Ph.D., University of Pittsburgh; clinical pharmacology, cardiovascular pharmacology, hypertension.

A few 400 level courses (PMC 403, 404) have been approved for select students to apply towards this degree. Permission from advisors to register for these undergraduate courses is required.

515 Pharmacology for Nurse Anesthetists. 3 lecture hours. 3 credits. I. The basic principles of pharmacology including mechanisms of absorption, distribution, biotransformation, elimination, dose-response relationships, drug and receptor interactions are presented followed by a detailed discussion of autonomic, cardiovascular, and renal pharmacology as it relates to nurse anesthesia.

516 Pharmacology for Nurse Anesthetists. 3 lecture hours. 3 credits. II. A detailed presentation of the pharmacology of classes of drugs used by nurse anesthetists including agents with primary therapeutic effect on the brain and endocrine glands. General and regional anesthetics will be emphasized.

517/MIC 517 Biology of Cancer. 3 lecture hours. 3 credits. I. A presentation of the basic aspects of neoplasia with specific blocks devoted to pathology, biochemistry, carcinogenesis, anticancer drugs, and immunology. This is an interdisciplinary course offered primarily by the Departments of Pharmacology, Microbiology, Biochemistry, and Pathology.

535 Principles of Toxicology. 4 lecture hours. 4 credits. I. The basic principles of the various aspects of toxicology are presented. Correlations of functional, morphological, carcinogenic, teratogenic, and mutagenic responses with biochemical and toxicological lesions are attempted. Environmental and industrial toxicology, food and agricultural chemicals, pertinent legislation, and principles of forensic toxicology will also be covered.

536 General Pharmacology. 4.5 lecture hours. 4.5 credits. II. Prerequisites: PIO 501 and BIC 503 or

permission of instructor. A comprehensive course in pharmacology for graduate students. The mechanisms of action of major classes of pharmacologically active agents and basic principles of pharmacology are discussed. Topics discussed in the first half of the course include drug absorption, distribution, and metabolism; receptor theory; chemotherapy and endocrine pharmacology.

537 General Pharmacology. 4.5 lecture hours. 4.5 credits. I. (Continuation of PMC 536). Topics covered in the second semester include: autonomic, cardiovascular, and central nervous system pharmacology.

548 Drug Dependence. 3 lecture hours. 3 credits. Prerequisite: graduate or post-baccalaureate standing. See PMC 448 for course description. This course may not be taken in lieu of any pharmacology offerings in the professional schools on the MCV Campus.

590 Pharmacology Seminar. 1 lecture hour. 1 credit. I, II. Members of the departmental staff, students, and visiting lecturers participate in discussions on topics of current and historical interest.

597 Introduction to Pharmacological Research. 1-10 credits. I, II. Prerequisite: permission of instructor. Research in pharmacology laboratories for beginning graduate students.

609 General Pharmacology and Pain Control. 4 lecture hours. 4 credits. I, II. The basic principles of pharmacology, including mechanisms of absorption, distribution, biotransformation, elimination; dose-response relationships, drug-receptor interactions are presented followed by detailed discussions of the various classes of drugs, with special consideration given to mechanisms of action and untoward effects of drugs used in dentistry to control pain and related symptoms.

611 General Pharmacology and Pain Control. 2 lecture and 1 laboratory hour. 2 credits. I, II. A continuation of PMC 609.

625 Biochemical Pharmacology. 3 lecture hours. 3 credits. I. (Alt. yrs. '84-'85.) Selected topics dealing with drug biotransposition and cellular sites of drug action.

632 Neurochemical Pharmacology. 3 lecture hours. 3 credits. II. (Alt. yrs. '84-'85.) The biochemical and theoretical aspects of the effects of drugs on the central nervous system will be discussed.

633 Behavioral Pharmacology. 3 lecture hours. 3 credits. I. (Alt. yrs. '83-'84.) This is a survey course covering research on the effects of drugs on behavior. The major emphasis will be on schedule-controlled learned behavior. Additional topics include drug self-administration, drug discrimination, and conditioned drug effects and behavioral toxicology. The course focuses primarily on laboratory research in animals although human research will also be covered. The relevance of this research literature to drug treatment of behavioral disorders and substance abuse will be discussed.

637 Cardiovascular-Autonomic Pharmacology. 3 lecture hours. 3 credits. II. (Alt. yrs. '83-'84.) Specialized

¹Department in parentheses indicates joint appointment.

advanced course in the pharmacology of drugs which affect these systems.

638 Advanced Toxicology. 3 lecture hours. 3 credits. II. (Alt yrs. '84-'85.) A holistic approach will be taken to describe and analyze toxicological information. Animal, organ, cellular, and biochemical responses to toxic agents are presented. Immunologic, genetic, endocrine, and central nervous system paradigms and their relationship to the mechanism of action of these agents as well as the predictive value of tests of these systems will also be covered. Pharmacokinetics and metabolism of toxic agents as well as statistical and analytical procedures will be integrated into these discussions.

639 Drug Development. 1 lecture and 4 laboratory hours. 3 credits. I. (Alt. yrs. '84-'85.) Prerequisite: PMC 536 and 537 or their equivalents. The principles of drug screening, advanced testing, and procedures necessary prior to the clinical evaluation of new products are described. An emphasis is placed on physiological type procedures used in pharmacology. Conducted in cooperation with scientists from A. H. Robins.

641 Pharmacology Review (Dentistry). 1 lecture hour. 1 credit. I. A review course in pharmacology for senior dental students.

642 Patient, Drugs, Diseases, and Dentists. 1 lecture hour. 1 credit. II. Discussion of patients, their diseases, drugs used to treat these diseases, and how they relate to the practice of dentistry.

644 Forensic Toxicology. 3 lecture and 2 laboratory hours. 4 credits. II. (Alt. yrs. '83-84.) Lecture and laboratory exercises in which common poisons and groups of poisons are discussed as to detection, diagnosis, and treatment of poisoning. Laboratory work includes basic principles of analytical toxicology.

691 Special Topics. 1-4 credits. I, II. Prerequisite: permission of instructor. Special topics in pharmacology or toxicology covered in less detail in other courses will be studied in depth in this course.

697 Research in Pharmacology. 1-15 credits. I, II, S. Research in pharmacology laboratories for advanced graduate students.

Department of Physiology and Biophysics (PIO)

FACULTY

Barnes, Robert W. *Professor* M.D., University of Illinois; cardiovascular biophysics.

Baumgarten, Clive Marc *Assistant Professor* Ph.D., Northwestern University; cardiac electrophysiology.

Biber, Thomas U. L. *Professor* M.D., University of Berne; epithelial transport.

Boadle-Biber, Margaret C. *Associate Professor* D.Phil., University of Oxford; neurotransmitters.

Briggs, F. Norman *Professor and Chairman* Ph.D., University of California at Berkeley; cardiac physiology.

Clamann, H. Peter *Associate Professor* Ph.D., Johns Hopkins University; motor physiology.

Clarke, Alexander M. *Associate Professor* Ph.D., University of Virginia; radiation biophysics.

Cleary, Stephen F. *Professor* Ph.D., New York University; radiation biophysics.

Corley, Karl C. *Associate Professor* Ph.D., University of Rochester; autonomic physiology.

Costanzo, Linda S. *Adjunct Assistant Professor* Ph.D., State University of New York Upstate Medical Center; renal physiology.

Costanzo, Richard M. *Assistant Professor* Ph.D., State University of New York Upstate Medical Center; sensory physiology-chemical senses.

DeSimone, John A. *Associate Professor* Ph.D., Harvard University; sensory physiology-chemical senses.

Driska, Steven P. *Assistant Professor* Ph.D., Carnegie Mellon University; vascular smooth muscle physiology.

Eckberg, Dwain L. *Professor* M.D., Northwestern University; cardiovascular physiology.

Edwards, Leslie E. *Professor Emeritus* Ph.D., University of Rochester; gastrointestinal physiology.

Fabiato, Alexandre *Professor* M.D., Ph.D., University of Paris; cardiac physiology.

Feyer, Joseph J. *Assistant Professor* Ph.D., Cornell University; muscle physiology.

Ford, George D. *Associate Professor* Ph.D., West Virginia University; vascular muscle physiology.

Ham, William T. *Professor Emeritus* Ph.D., University of Virginia; radiation biophysics.

Huf, Ernst G. *Professor Emeritus* Ph.D., M.D., University of Frankfurt; transport mechanisms.

Kalimi, Mohammed Y. *Associate Professor* Ph.D., Bombay University; endocrinology.

Mayer, David J. *Professor* Ph.D., University of California-Los Angeles; sensory physiology-pain.

Merz, Timothy *Professor* Ph.D., Johns Hopkins University; radiation biophysics.

Mikulecky, Donald C. *Professor* Ph.D., University of Chicago; theoretical biology.

Pang, David C. *Research Assistant Professor* Ph.D., McGill University; cardiac physiology.

Pittman, Roland N. *Associate Professor* Ph.D., State University of New York at Stony Brook; circulatory physiology.

Poland, James L. *Associate Professor* Ph.D., West Virginia University; exercise physiology.

Price, Steven *Professor* Ph.D., Princeton University; sensory physiology-chemical senses.

Rao, Gopal U. V. *Professor* D.Sc., Johns Hopkins University; radiation biophysics.

Ridgway, Ellis B. *Associate Professor* Ph.D., University of Oregon; muscle physiology.

Stein, Barry E. *Professor* Ph.D., City University of New York, Queens College; sensory physiology-vision.

Szumski, Alfred J. *Associate Professor* Ph.D., Medical College of Virginia of Virginia Commonwealth University; motor physiology.

Witorsch, Raphael J. *Associate Professor* Ph.D., Yale University; endocrinology.

Wist, Abund O. *Research Assistant Professor* Ph.D., University of Vienna; computer science.

A few 400 level courses (PIO 413, 461, 482) have been approved for select students to apply towards this degree. Permission from advisors to register for these undergraduate courses is required.

501 Mammalian Physiology. 5 lecture hours. 5 credits. I. Prerequisite: biology, chemistry, and physics. A comprehensive study of the function of mammalian organ system, designed primarily for graduate students.

502 Mammalian Physiology. 5 lecture and 3 laboratory hours. 6.5 credits. II. Prerequisite: same as for PIO 501. A comprehensive study of the function of mammalian organ systems, designed primarily for dental and pharmacy students.

503 Radioisotopes. 3 lecture and 2 laboratory hours. 4 credits. I. Elements of nuclear physics, statistics of counting, radiation dosimetry, health physics, radiation protection, tracer, radiographic techniques, and liquid scintillation and gamma counting techniques.

590 Physiology Seminar. 1 lecture hour. 1 credit. I, II. Reports on current physiological research and problems presented by graduate students, staff, and visiting lecturers.

604 Cell Physiology. 4 lecture hours. 4 credits. II. A description of the functional properties of cells in terms of physics and chemistry. Topics discussed include cell structure and cytochemistry, bioenergetics, secretion, transport of material across membranes, excitation, and contractility.

605 Mathematical Physiology. 3 lecture hours. 3 credits. I. The application of set theory to physiological problems. Physiological functions and mappings. Linear transformations. The use of complex numbers. Limits, derivatives, and integrals and their use in physiology. Rate processes. Physiological function and its dependence on many variables. Probabilistic ideas in physiology.

606 Physical Principles in Physiology. 4 lecture hours. 4 credits. II. Prerequisite: PIO 505 or permission of instructor. A survey of those principles of physics and physical chemistry underlying physiological processes. Topics include energetics of equilibrium and nonequilibrium systems, electrode processes, reaction-diffusion systems, kinetics, photochemistry, physical techniques in physiological research.

607 Applied Electronics in Biology and Medicine. 2 lecture and 2 laboratory hours. 3 credits. II. (Alt. Yrs. '83-'84) fundamental principles and applications of electronics as related to biological sciences.

608 Computer Technology in the Biomedical Sciences. 2 lecture and 2 laboratory hours. I. Research and clinical applications of automatic and semi-automatic data acquisition. Describes the functions and operations of microcomputers in detail. Development and assembly of microcomputer systems for biomedical application using an educational kit. Students can assemble their own microcomputer driven systems in the laboratory.

612 Cardiovascular Physiology. 3 lecture hours. 3

credits. II. Prerequisite: permission of instructor. An in-depth study of the original literature in selected areas of cardiovascular physiology.

614 Membrane Transport. 2 lecture hours. 2 credits. I. Advanced description of membrane transport processes.

615 Neurophysiology. 3 lecture hours. 3 credits. I. Prerequisite: permission of instructor. An in-depth study of the original literature in selected areas of neurophysiology.

617 Endocrine Physiology. 3 lecture hours. 3 credits. I. Prerequisites: courses in mammalian physiology and biochemistry, or permission of instructor. An in-depth study of the original literature in selected areas of endocrine physiology.

618 Gastrointestinal and Renal Physiology. 3 lecture hours. 3 credits. II. Prerequisite: permission of instructor. An in-depth study of the original literature in selected areas of gastrointestinal and renal physiology.

622 Circuit Design and Analysis. 3 lecture hours. 3 credits. II. (Alt. yrs. '83-'84.) Prerequisite: college physics, calculus. Emphasis is placed on the understanding in depth of the analysis and design of electronic circuits. Designed to meet the needs of quantitatively oriented students.

623 Introductory Radiation Biophysics. 5 lecture hours and 10 laboratory hours. 4 credits. S. This introductory course exposes the student to the basic physics behind the entire spectrum of radiation producing and radiation measuring equipment used in clinical medicine. Equipments discussed includes X-ray tubes, image intensifiers, intensifying screens, X-ray films, radionuclide imaging devices, linear accelerators, radionuclide teletherapy units, computerized emission and transmission scanners, etc. Radiation safety features involved in their design and use are also considered. Each session consists of a brief introductory lecture followed by an extensive laboratory. Each topic involves a 1-hour lecture and 2-hour laboratory, 5 days a week for 6 weeks during the summer semester.

624 Physics of Diagnostic Radiology. 3 lecture and 2 laboratory hours. 4 credits. I and II. Covers in depth the physical principles behind the use of radiation for medical diagnostic and therapeutic purposes. Topics covered include image forming devices, analysis and optimization of image quality, linear accelerators, betatrons, and sealed sources of ionizing radiation. Radiation dose measurement and treatment planning techniques are also considered. Each topic is developed with lecture and laboratory components in each semester.

625 Irradiated Biological Systems. 3 lecture hours. 3 credits. II. An advanced-level course designed to provide information about the structure, properties, and biological activity of a class of agents that are mutagenic, carcinogenic, and lethal. These include ionizing and nonionizing radiation, chemical mutagens, and clastogens (chromosome breaking). The significant physics and significant chemistry will be examined. The biological responses will be considered in detail. Biological damage, repair of damage, and the ex-

pression of unrepaired and misrepaired damage will be presented in systems spanning isolated biological material, cell organelles, procaryotes, and in vivo human responses. Consideration will also be given to cell survival, in critical target, repair processes, chromosomal and other genetic events, physiological phenomena, development effects, immune system alternations, carcinogenesis, medical uses and ecology.

691 Special Topics in Physiology. 1-4 credits. I, II. Prerequisites: a 500-level physiology course or equivalent; permission of instructor. This course is designed to provide study of specific topics in physiology. The topics offered include cell physiology, neurophysiology, cardiopulmonary physiology, renalgastrointestinal physiology, and endocrinology.

697 Research in Physiology. 1-15 credits. I, II, S. Research in physiology.

Department of Pathology (PAT)

FACULTY

Blanke, Robert V. *Professor* Ph.D., University of Illinois at Chicago Circle; characterization and measurement of toxic substances and their metabolites.

Cross, Sue S. *Assistant Professor (Microbiology and Immunology)*¹ Ph.D., George Washington University; polytropic C-type, mouse thymic and lactic dehydrogenase viruses, host-versus-graft disease.

Dalton, Harry P. *Professor (Microbiology and Immunology)*¹ Ph.D., University of Massachusetts; mycoplasma, L-forms and chlamydia, antibiotic action.

Elzay, Richard P. *Professor* Ph.D., D.D.S., Indiana University; oral pathology.

Escobar, Mario R. *Professor* Ph.D., Indiana University; mechanisms of viral immunopathology, viral carcinogenesis, hepatitis.

Fisher, Lyman M. *Professor* Ph.D., M.D., University of Saskatchewan, Canada; platelet function, atherosclerosis.

Gander, George W. *Professor (Biochemistry)*¹ Cornell University; inflammation and phagocytosis, pathogenesis of fever.

Gerszten, Enrique *Professor* M.D., University of Buenos Aires, Argentina; paleopathology, medical education.

Gruemer, Hans-Dieter *Professor* M.D., University of Frankfurt; membranes in the pathogenesis of Duchenne muscular dystrophy, biochemistry of disease.

Hadfield, M. Gary *Professor* M.D., University of Utah; neurotransmitter responses to aggressive behavior, stress, and psychoactive drugs, electron microscopy.

Hard, Richard *Associate Professor* M.D., St. Louis University; immunopathology.

Hossaini, Ali A. *Professor* Ph.D., Ohio State University; biological function of lectins in cancer and hematologic disorders, epidemiology of hepatitis.

Johnston, Charles L., Jr. *Professor* M.D., University

of Pennsylvania; hematology, cell marker and cytochemistry.

King, Mary E. *Assistant Professor* Ph.D., University of Iowa; interaction of the cytoskeleton system with the plasma membrane.

Lim, Franklin *Associate Professor* Ph.D., Purdue University; microencapsulation of biological materials, analytical biochemistry and instrumentation.

Madge, Gordon E. *Professor (Microbiology and Immunology, Ophthalmology)*¹ M.D., University of Maryland; experimental diabetes mellitus, Reye's syndrome, pathophysiology of transplantation.

Miller, W. Gregory, Jr. *Assistant Professor* Ph.D., University of Arizona; mechanism of complement activation.

Moncure, Charles E. *Associate Professor* M.D., Medical College of Virginia Commonwealth University; tumor markers, immunochemistry, autoimmunity.

Nakoneczna, Irene *Associate Professor* M.D., Albert-Ludwigs University, Germany; anatomic pathology.

Qureshi, Ghulam D. *Associate Professor (Medicine)*¹ M.D., King Edward Medical College of Pakistan; synthesis of clotting factors by the liver.

Rosenblum, William I. *Professor and Vice-Chairman* M.D., New York University; cerebral microcirculation, blood substitutes.

dos Santos, Jose *Professor* M.D., University of Bahai, Brazil; parasitology.

Schatzki, Peter F. *Professor* M.D., Tufts University; Ph.D., University of Texas; ultrastructural changes in the liver, electron microscopy.

Scott, Robert B. *Professor* M.D., Medical College of Virginia; leukemia and cell differentiation.

Shadomy, Helen Jean *Professor* Ph.D., University of California at Los Angeles; medical mycology, biology of "Cryptococcus".

Shadomy, Smith *Professor* Ph.D., University of California at Los Angeles; anti-microbial evaluation, experimental chemotherapy of infectious diseases.

Sharp, David E. *Assistant Professor* M.D., Ph.D., University of North Carolina; platelet and blood cell survival, plasmapheresis in drug therapy.

Shiel, Fergus O'M. *Professor* M.D., National University of Ireland; cardiovascular pathology, stress-induced cardiomyopathy.

Vennart, George P. *Professor and Chairman* M.D., University of Rochester; liver diseases, lipid chemistry.

Webb, Stanley R. *Associate Professor* Ph.D., Purdue University; virology.

The Department of Pathology of the School of Medicine offers the Master of Science and Doctor of Philosophy degrees. Requirements for admission and academic performance are the same as for the School of Basic Sciences.

¹Department in parenthesis indicates joint appointment.

509 Basic Immunohematology. 3 lecture hours. 3 credits. II. A study of the blood groups in man, their mode of inheritance, and clinical significance. Pertinent laboratory exercises will be carried out in the blood bank.

510 Basic Clinical Immunohematology. 4 lecture hours. 4 credits. I. Prerequisite: PAT 509 or permission of instructor. Indications for the transfusion of blood, blood components, and derivatives. Laboratory experience related to the collection and storage of blood, blood components, and blood derivatives.

513 Blood Banking Laboratory. 8 laboratory hours. 4 credits. I, II. Prerequisite: PAT 509. The laboratory is devoted to exercises in blood grouping, typing, genotyping, antibody screening, antibody identification, detection of Australia antigen (HB_sAg), and the collection of blood from normal donors.

515 Problems in Neuroscience. 3 lecture hours. 3 credits. I. This multidisciplinary pathology/neuroscience course is designed to provide graduate students, residents, and others with a broad, updated, and integrated overview of neuropathology and the other neurosciences. Basic molecular and cellular principles of neurobiology are brought to life by selected clinical correlations and applications. The lectures introduce major CNS pathways and systems in conjunction with basic and advanced neuropathological principles. The disease topics are cohesively taught from several points of view by specialized faculty drawn from many departments, clinical and basic.

521 Clinical Chemistry. 3 lecture hours. 3 credits. I. Prerequisite: permission of instructor. Principles and applications of automation and instrumentation to the analysis of biological fluids in health and disease. May be repeated for up to 12 credits.

522 Clinical Chemistry 3 lecture hours. 3 credits. II. Prerequisite: permission of instructor. The metabolic basis of disease and the interpretation of laboratory data for diagnosis and patient management. May be repeated up to 12 credits.

530 Clinical Immunopathology. 2 lecture and 6 laboratory hours. I. Prerequisite: MIC 506 or equivalent. Application of immunologic methods to disease diagnosis and management with emphasis on immunopathogenetic mechanisms of organ systems: endocrine, lympho-reticuloendothelial, renal, gastrointestinal, cardio-pulmonary, skin, neurologic, etc. Technical aspects of testing, test interpretation, and clinical case presentations will be intermingled to provide a comprehensive understanding of clinical immunopathology and its role in patient care.

580 Experimental Pathology Seminar. 1 lecture hour. 1 credit. I, II.

590 Clinical Chemistry Seminar. 1 lecture hour. 1 credit. I, II. Graduate students, residents, and staff present topics of current interest in clinical chemistry.

601 General Pathology (Dentistry). 3 lecture and 6 laboratory hours. 6 credits. Instruction in the basic principles regarding alternation of structure and function in disease and in the pathogenesis and effect of disease in the various organ systems.

602 Experimental Pathology of Infectious Diseases. 2 lecture and 6 laboratory hours. 5 credits. II. Autopsies and histopathology are studied to acquaint the graduate student with infectious disease pathology. Various animal and other models are used to demonstrate pathogenesis of some infections and other inflammatory mechanisms.

606 Biochemistry of Disease. 2 lecture hours. 2 credits. I. Prerequisite: BIC 503. A detailed study of the biochemical mechanisms involved in the pathogenesis of certain diseases.

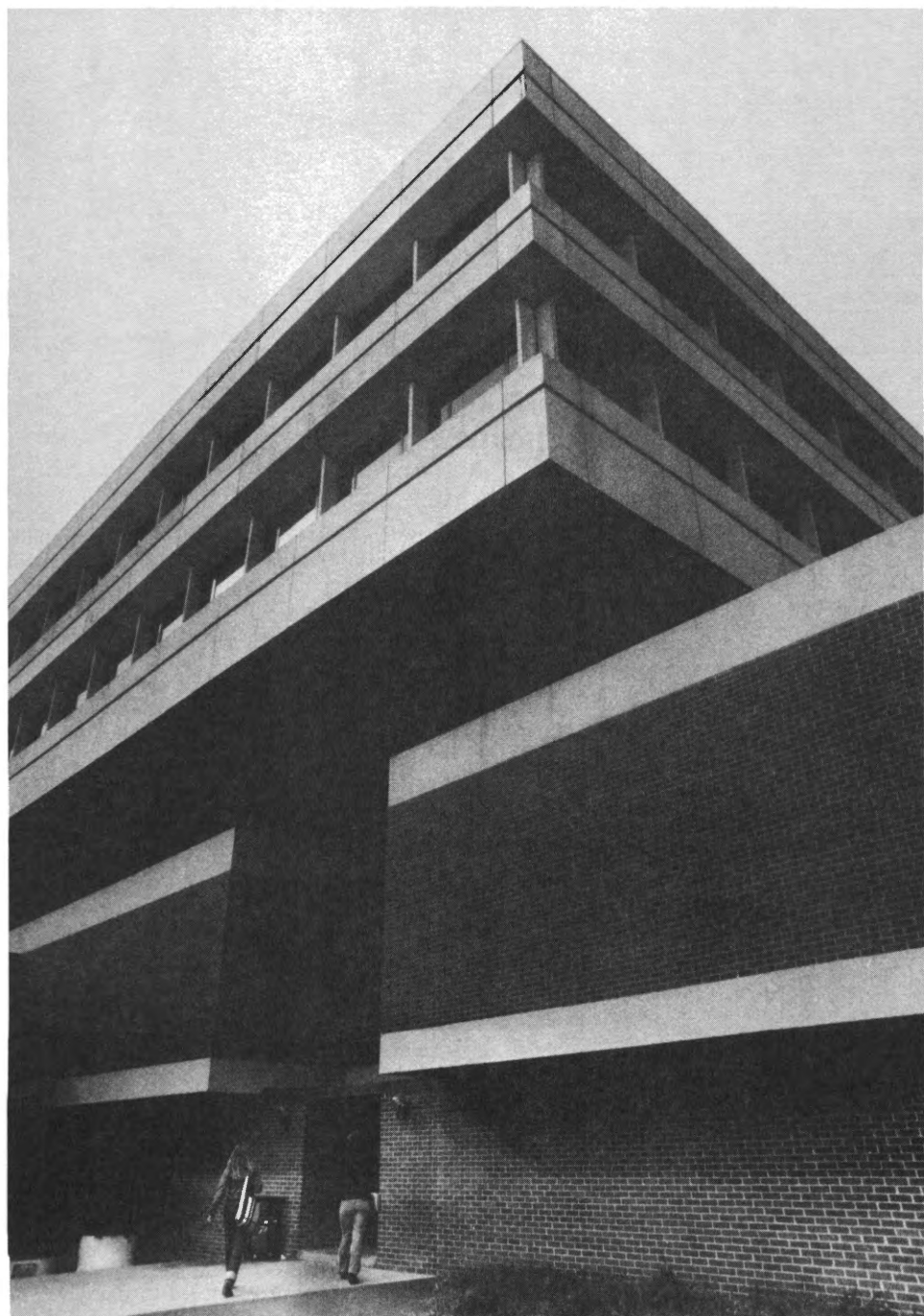
610 Physiology of Blood Coagulation. 1 lecture and 4 laboratory hours. 3 credits. II. Prerequisite: BIC 503 and PIO 502. The historical development of bleeding and clotting disorders with current diagnostic methodology and treatment.

612 Viral Immunohistopathology and Serodiagnosis. 3 lecture and 4 laboratory hours. 5 credits. I. Prerequisite: MIC 502. In-depth treatise of immunologic and immunopathologic mechanisms of viral diseases, focusing on organ systems: neurologic, immunologic, hematopoietic and lymphatic, gastrointestinal, cardiopulmonary, dermatologic, genitourinary, etc. Findings based on histopathology and immunocytochemistry, using the latest clinical laboratory methods, will be applied to diagnosis and management of the patient with acute, latent or chronic viral infection. Technical aspects of methodology, test interpretation on the basis of clinical information and clinical case presentations in the actual hospital setting will be intermingled to provide a comprehensive understanding of diagnostic virology and its role in patient care.

614 Pathogenesis of Infectious Disease (Bacterial Agents). 2 lecture and 4 laboratory hours. 4 credits. II. Prerequisite: MIC 515 or equivalent. Emphasis is on the pathogenesis and epidemiology of infectious disease. The dynamic interaction among the host, microorganism, and environment are documented using data obtained from MCV Hospitals. Students have the opportunity to apply laboratory data and techniques to present microbiological problems in clinical areas.

620 Special Topics in Modern Instrumental Methods. 1 lecture and 2 laboratory hours. 2 credits. I, II. A study of some of the modern research methods of molecular biology. The student gains experience with the technique concomitant with discussions with faculty. The student writes a comprehensive review of the technique studied.

690 Research in Pathology. 1-15 credits. I, II, S. Research leading to M.S. or Ph. D. degree.



PART VI—School of Business

ADMINISTRATIVE OFFICERS

J. CURTIS HALL, A.B., M.S., Ed.D.

Dean

MOUSTAFA H. ABDELSAMAD, B.Com., M.B.A.,
D.B.A.

Associate Dean for Graduate Studies

GLENN H. GILBREATH, B.S., M.S., Ph.D.

Associate Dean for Undergraduate Studies

JOHN D. LAMBERT, B.S., M.S., Ph.D.

Associate Dean for Administration

DENNIS O'TOOLE, B.A., M.S., Ph.D.

Associate Dean for External Affairs

JOHN B. SPERRY, B.S., M.B.A., Ph.D., C.P.A.

Chairman, Department of Accounting

WALTER S. GRIGGS, JR., M.H., J.D., Ed. D.

Chairman, Department of Business Administration
and Management

J. HOWARD JACKSON, B.S., M.S., Ph.D., C.P.S.

Chairman, Department of Business Education and

Office Administration

GEORGE E. HOFFER, B.S., M.S., Ph.D.

Chairman, Department of Economics

A. JAMES WYNNE, B.S., M.S., Ph.D.

Chairman, Department of Information Systems

KURT E. OLMOSK, B.S., Ph. D.

Acting Director, The Management Center

HEIKO deB. WIJNHOLDS, B. Comm., M. Comm.,
D. Comm.

Acting Chairman, Department of Marketing

Virginia Commonwealth University's School of Business and its graduate program can be traced back to 1917 when a board of private citizens organized the Richmond School of Social Economy for Social Workers and Public Health Nurses. The school was first headed by Dr. Henry H. Hibbs and held its first classes in a converted

residence at 112 Capital Street in Richmond, Virginia. For the next 20 years, the school underwent changes in name, physical plant, affiliation, and curriculum. By 1937 the school was called the Richmond Professional Institute, was affiliated with the College of William and Mary, and had added business courses to the curriculum.

The first business courses were designed primarily to aid students in obtaining employment in retail establishments and in becoming professional secretaries. It was soon apparent, however, that these business courses were successful and were able to meet a community need. Accordingly, by 1940 the Department of Economics and Business was established, and in 1943 the first Bachelor of Science in business degree was awarded.

The G.I. bill, which emerged from World War II, enabled many former servicemen to return to school, and many of these veterans studied business. Throughout the 1940s and 1950s, the business program expanded and grew as it continued to meet the needs of an urban community. During its development, the School of Business offered a one-year certificate in secretarial work, a two-year certificate in business administration, a three-year certificate in accounting, and a four-year degree. The success of the undergraduate program led to the development of graduate curricula. In 1962 the

Master of Science in business degree was awarded. Other degrees have been added to meet the needs of an urban constituency.

The graduate program in business at Virginia Commonwealth University is a successor to a long tradition of meeting the needs of an urban community and an urban student body. From the halting starts of the past, the program has continued to develop and mature to meet the needs of the future.

DEGREE PROGRAMS

The School of Business offers degree programs leading to the Master of Accountancy, Master of Arts in economics, Master of Business Administration, Master of Science in business, Master of Taxation, and the Ph.D. in business.

CERTIFICATE PROGRAMS

The School of Business offers the post-baccalaureate certificate in accounting and the post-baccalaureate certificate in information systems.

ADMISSION TO MASTER'S DEGREE PROGRAMS

Students who have earned a bachelor's degree or its equivalent may be admitted to the graduate programs. Selection is made on the basis of undergraduate performance, Graduate Management Admission Test (GMAT), or Graduate Record Examination (GRE), depending upon the graduate program desired, intellectual capacity, character, experience, and other indicators of the ability to pursue graduate study profitably. To be accepted in the graduate program, in addition to other requirements, applicants must be in good standing at the college or university they previously attended.

Satisfactory subject-matter scores on the College Level Examination Program (CLEP) may, on a limited basis and at the discretion of the associate dean for graduate studies in business, be substituted for some foundation courses. The CLEP Bulletin of Information and a registration form may be obtained from the College-Level Examination Program, Box 1824, Princeton, NJ 08540, or from the Office of Graduate Studies in Business.

Foreign students should see the section on international students in Part I of this bulletin.

Applicants to the Master of Accountancy, Master of Business Administration, Master of Science, and Master of Taxation programs must submit scores on the Graduate Management Admission Test (GMAT). The School of Graduate Studies of VCU administers the testing for the GMAT which will be offered on October 22, 1983; January 28, 1984; March 17, 1984; and June 16, 1984. This test should be taken as far as possible in advance of the time of desired entry. The GMAT Bulletin of Information and a registration form may be obtained from the School of Graduate Studies, University Enrollment Services, the Office of Graduate Studies in Business, or the Graduate Management Admissions Test, Educational Testing Service, Box 966-R, Princeton, NJ 08541.

Applicants to the Master of Arts degree program in economics must submit scores on the Graduate Record Examination (GRE), including the advanced test in economics. The School of Education at VCU is a testing center for this examination which is given in October, December, January, February, April, and June. This test should be taken as far as possible in advance of the time of desired entry. The GRE Bulletin of Information and a registration form may be obtained from the School of Graduate Studies, University Enrollment Services, or the Office of Student Services, School of Education, 2087 Oliver Hall, (804) 257-1296 on the Academic Campus, or Educational Testing Service, Princeton, NJ 08540, U.S.A.

MASTER'S APPLICATION DEADLINE

Applications should be completed at least eight weeks prior to the beginning of the semester or summer session desired. However, applications received after the deadline are evaluated as soon as possible.

COURSES TAKEN PRIOR TO ACCEPTANCE

No credit will be given for *graduate classes* taken prior to acceptance into a graduate degree program in business or economics.

ENROLLMENT IN GRADUATE COURSES

Students may not enroll in any graduate business or economics courses (except BUS 600) for credit without first being formally admitted to the graduate programs. Exceptions to this policy are made only with written permission of the associate dean for graduate studies in business.

TRANSFER CREDIT TO MASTER'S DEGREE PROGRAMS

A maximum of six semester hours of acceptable graduate credit earned in a degree program at an accredited institution may be transferred and applied toward the graduate degree. Such credits will be evaluated for acceptance purposes at the completion of nine semester hours of work at this institution.

Acceptance of transfer credit is made at the discretion of the associate dean for graduate studies in business.

All transfer work must be at the "A" or "B" grade level. Students must be in good standing both at Virginia Commonwealth University and at the institution from which the credits were earned. Additionally, students must have had full admission during the time these credits were earned at that college or university. Transfer credit shall not be older than seven years at the time the master's degree is awarded.

Credit to be earned at other institutions after acceptance in the graduate program must be approved in advance, and approval is granted at the discretion of the director of graduate studies in business. Such work is approved only under unusual circumstances such as job transfers or other extenuating circumstances.

A "graduate transient" classification may be granted to a student in good standing in any recognized graduate school who desires to enroll in the School of Business for any one semester or summer session. Students will be required to present certificates of graduate standing but will not have to submit the data normally required for an admission decision. A special form is available to facilitate enrollment.

ADVISING PROGRAM

All students admitted to graduate programs are assigned advisors. Students are ex-

pected to work with their advisors to plan their graduate programs. Each graduate program or changes thereto must be approved by both the advisor and the associate dean for graduate studies in business. Courses taken without approval are taken at the student's own risk.

Students are responsible for knowing and fulfilling all general and specific requirements relating to the completion of their degree programs. Answers to specific questions may be obtained from the Office of the Associate Dean of Graduate Studies in Business.

Students admitted to the post-baccalaureate certificate programs in accounting and information systems will also be assigned advisors.

GENERAL REQUIREMENTS FOR MASTER'S DEGREES

1. Degree recipients must have received an overall grade-point average of 3.0 ("B") on credit hours attempted at Virginia Commonwealth University. All grades received in courses required in student programs, whether graduate or undergraduate, will be included in computing the average. Excluded from this are BUS 600 and courses taken by students for their own benefit but not required in the program. The grades of "D" and "F" are counted in computing the overall grade-point average but carry no graduate credit.
2. Students who fail to register for at least one course per year will be dropped automatically from the program and must reapply for admission to continue in the program. At that time, some or all of the courses completed prior to the reapplication may not be accepted toward the degree program.
3. Grades of "A," "B," and "C" are passing grades; "D" is not a passing grade. Students who receive a grade of "C" or below on more than 20 percent of the credit hours attempted for the degree program will be dropped from their programs. Also, students accepted conditionally are required to satisfy the requirements stated in their letters of acceptance. Courses required

- in the program, regardless of their level (undergraduate, graduate-foundation, or graduate-advanced) are included under this rule.
4. Courses in which students have earned a grade of "D" or "F" must be repeated if these courses are needed for graduation. Courses for which a passing grade was received cannot be repeated without prior written permission of the associate dean for graduate studies in business. An appeal to the School of Business Graduate Advisory Committee is required.
 5. Students who satisfy all the requirements but the 3.0 average may be allowed to take a maximum of six additional credit hours to raise the average. Students are required to appeal to the School of Business Graduate Advisory Committee to seek permission.
 6. A foundation course may be waived by the associate dean for graduate studies in business, based on satisfactory completion of equivalent undergraduate work prior to acceptance in the program. CLEP credit at the "B" or higher level may be accepted in lieu of foundation courses with permission. Waiving courses is at the discretion of the School of Business.
 7. Full-time graduate status shall consist of a minimum of nine and a maximum of 16 graduate credits per semester. A maximum of 12 credits may be earned in Summer Sessions each summer.
 8. Students must continually demonstrate acceptable professional behavior to be retained in a program of graduate studies.
 9. A maximum of two courses in the master's programs may be taken with prior approval at the 400-level (courses not designated exclusively for graduate students). These courses are not acceptable in the M.B.A., Master of Accountancy, Master of Taxation or in the personnel and industrial relations concentration of the M.S. in business program. The advisor and associate dean for graduate studies in business may restrict even further the number of 400-level courses that may be taken in a specific program.
 10. All requirements for the degree must be completed within five years from the date of admission to graduate study. This time limitation applies to both full- and part-time students. A maximum of two one-year extensions may be granted by the associate dean for graduate studies in business if satisfactory progress was demonstrated on the part of students requesting extensions. For extensions, write to the director of graduate studies in business.
 11. Students are not permitted to take undergraduate courses equivalent to foundation courses once they are admitted to the graduate program without the written permission of the associate dean for graduate studies in business.
 12. The records of students who receive grades of "D" or "F" may be reviewed by the associate dean for graduate studies in business to determine whether they should continue or should be dropped from the program.
 13. Students may not use the same course(s) for two graduate degrees.
 14. The maximum time allowed to change a grade of incomplete is the semester following the semester or summer session in which the grade of incomplete was given. An incomplete grade not changed by that time will be converted to a grade of "F."

QUANTITATIVE BACKGROUND

Master's students with inadequate quantitative background will be required to take additional classes (MAT 100 and BUS 600).

CHANGE IN PROGRAM OR CONCENTRATIONS

Students who desire to change their graduate programs or areas of concentration within the school must make that request in writing to the associate dean for graduate studies in business. He will advise them of the necessary requirements and whether the change is possible. The student must be in good standing at the time of change.

CHANGE OF ADDRESS

The student should notify, in writing,

both University Enrollment Services/Records and the Office of Graduate Studies in Business of any address changes.

GRADUATION

Students must apply to be graduated. For specific instructions as related to the School of Business, contact the associate dean for graduate studies in business.

STUDENT APPEALS

Appeals for exceptions to policies or academic standards may be made in writing to the School of Business Graduate Advisory Committee, Graduate Studies in Business, School of Business, Virginia Commonwealth University, 1015 Floyd Avenue, Richmond, VA 23284.

INDIVIDUAL RESEARCH PROJECTS

Various opportunities exist for students to work closely with faculty on individual research projects. BUS 690, 693, 697, 798-799, and ECO 798-799 are suitable for this purpose.

Unless students select the thesis option, no more than one research course may be taken as part of a program.

Research courses, except in the Master of Accountancy, must be taken at the end of the student's program. Registration in all research courses requires approval of the associate dean for graduate studies in business. Forms are available upon request from the Graduate Studies in Business Office. Students are expected to seek approval by the end of the semester or summer session preceding the semester or summer session for which registration is desired.

FINANCIAL AID

The School of Business offers a limited number of graduate assistantships to full-time students in the amount of \$3,000 for the academic year. For further information, write to the associate dean for administration of the School of Business.

Graduate students are also eligible for funds administered under the National Defense Loan and college work-study programs. For further information, write to Director of Financial Aid, Virginia Commonwealth University, 327 West Main Street, Richmond, VA 23284.

FACULTY

- Abdelsamad, Moustafa H. *Professor and Associate Dean for Graduate Studies* D.B.A., George Washington University; finance.
- Aboud, John, Jr. *Associate Professor* Ph.D., Pennsylvania State University; management.
- Ackley, Robert J. *Assistant Professor* Ed.D., Utah State University; business education and office administration.
- Ameen, David A. *Associate Professor* Ph.D., University of Maryland; information systems.
- Andrews, Robert L. *Assistant Professor* Ph.D., Virginia Polytechnic Institute and State University; management science.
- Atukorala, Vimal W. *Assistant Professor* Ph.D., American University; macroeconomic theory.
- Balogun, Jacob O. *Assistant Professor* Ph.D., Louisiana State University; accounting.
- Beall, Larry G. *Associate Professor* Ph.D., Duke University; economics of labor and health care.
- Berry, Sam G. *Associate Professor* D.B.A., Florida State University; finance.
- Blanks, Edwin E. *Assistant Professor* M.S., Virginia Commonwealth University; information systems.
- Bowman, John H. *Associate Professor* Ph.D., Ohio State University; public finance.
- Boykin, James H. *Professor and holder of Alfred L. Blake Chair* Ph.D., American University; real estate.
- Brindley, Edward C., Jr. *Visiting Associate Professor* Ph.D., University of Missouri; management science.
- Brown, Darrel R. *Professor* Ph.D., University of Oregon; management.
- Campbell, Thomas C. *Visiting Professor* Ph.D., University of Pittsburgh; transportation and industry studies.
- Canavos, George C. *Associate Professor and Assistant Dean of the School of Graduate Studies* Ph.D., Virginia Polytechnic Institute and State University; management science.
- Coffman, Edward N. *Professor* D.B.A., George Washington University; accounting.
- Coppins, Richard J. *Associate Professor* Ph.D., North Carolina State University; management science.
- Creasman, Kay M. *Assistant Professor* J.D., University of Richmond; business law.
- Dalton, Amy H. *Assistant Professor* Ph.D., University of Virginia; international economics.
- Daniel Herman C., III *Assistant Professor* J.D., University of Richmond; M.L.T., College of William and Mary; accounting.
- Daughtrey, William H., Jr. *Associate Professor* J.D., University of Richmond; business law.
- Dawson, Gaye C. *Assistant Professor* Ph.D., University of Maryland; information systems.
- DeGenaro, Guy J. *Professor* Ph.D., University of Florida; management.
- Dunn, Clarence L. *Professor* Ph.D., University of Illinois; C.P.A., accounting.
- Elliott, Clifford J. *Professor* Ph.D., Ohio State University; marketing management and international marketing.
- Everett, John O. *Associate Professor* Ph.D., Oklahoma State University; C.P.A.; accounting.
- Feiner, Susan F. *Assistant Professor* Ph.D., University of Massachusetts; economic history.

- Ferguson, Jerry T. *Associate Professor* Ph.D., University of Florida; real estate.
- Freeman, Scott A. *Assistant Professor* D.B.A., Kent State University; finance.
- Fuhs, F. Paul *Assistant Professor* Ph.D., University of Massachusetts; information systems.
- Gallagher, Charles J. *Associate Professor* Ph.D., West Virginia University; managerial economics.
- Gilbreath, Glenn H. *Professor and Assistant Dean for Undergraduate Studies* Ph.D., University of Alabama; management science.
- Gray, George R. *Associate Professor* Ph.D., University of Alabama; personnel.
- Gray, Robert L., Jr. *Assistant Professor* Ph.D., McMaster University, Hamilton, Ontario; information systems.
- Griggs, Walter S., Jr. *Associate Professor and Chairman* Ed.D., College of William and Mary; business administration and management.
- Haas, Frederick C. *Professor* Ph.D., University of Florida; management.
- Hall, J. Curtis *Professor and Dean* Ed.D., Columbia University; basic business.
- Harrison, William B., III *Associate Professor* Ph.D., University of Maryland; monetary economics and financial markets.
- Hellmuth, William F. *Professor* Ph.D., Yale University; public finance.
- Hodge, Bartow *Professor* Ph.D., Louisiana State University; information systems.
- Hodges, Bob S., III *Assistant Professor* Ph.D., University of Texas at Austin; marketing research.
- Hoffer, George E. *Professor and Chairman* Ph.D., University of Virginia; industrial organization.
- Holley, Charles L. *Associate Professor* D.B.A., University of Tennessee; C.P.A.; accounting.
- Holmes, Raymond T., Jr. *Professor* M.S., Virginia Commonwealth University; C.P.A.; accounting.
- Howorka, Mamiko V. *Assistant Professor* Ph.D., University of Florida; econometrics and mathematical economics.
- Hubbard, Elbert, *Associate Professor* Ph.D., University of Cincinnati; finance.
- Hull, Rita P. *Associate Professor* Ph.D., Oklahoma State University; C.P.A., C.I.A.; accounting.
- Humphreys, L. Wade *Assistant Professor* D.B.A., Florida State University; management.
- Humphreys, Neil J. *Associate Professor* Ph.D., University of Pennsylvania; management.
- Hunt, Eugene H. *Professor* Ed.D., University of Maryland; management.
- Jackson, J. Howard *Professor and Chairman* Ph.D., Ohio State University; business education and office administration.
- Jennings, George W. *Professor* Ph.D., University of Virginia; public finance.
- Johnson, Iris W. *Assistant Professor* Ed.D., Virginia Polytechnic Institute and State University; business education and office administration.
- Johnston, Russell, A. *Professor* Ed.D., University of Kentucky; management.
- Johnston, Wallace R. *Associate Professor* D.B.A., George Washington University; personnel.
- Klosky, J. Michael *Assistant Professor* Ph.D., Clemson University; information systems.
- Kurtulus, Ibrahim S. *Assistant Professor* Ph.D., University of North Carolina; management science.
- Lambert, John D. *Professor and Associate Dean for Administration* University of Michigan; management.
- Marcis, John G. *Assistant Professor* Ph.D., University of Missouri at Columbia; economics.
- Maricle, Kenneth E. *Associate Professor* D.B.A., Arizona State University; consumer behavior and macro-marketing.
- Mead, Howard R., Jr. *Assistant Professor* Ph.D., University of South Carolina; management.
- McDermott, Dennis R. *Associate Professor* Ph.D., Ohio State University; marketing management, and logistics and physical distribution.
- McLean, James H. *Professor* J.D., Emory University; Ph.D., Ohio State University; C.P.A.; accounting.
- Miller, Don M. *Assistant Professor* Ph.D., Virginia Polytechnic Institute and State University; management science.
- Miller, Elbert G., Jr. *Associate Professor* Ph.D., University of Alabama; management science.
- Morecroft, Josephine F. G. *Assistant Professor* Ph.D., Union College, New York; information systems.
- Mosser, Max *Professor* Ph.D., University of Pennsylvania; cycles and forecasting.
- Myers, Donald W. *Associate Professor* D.B.A., Georgia State University; management.
- Olds, Philip R. *Assistant Professor* Ph.D., Georgia State University; C.P.A.; accounting.
- Olmosk, Kurt E. *Assistant Professor* Ph.D., Case Western Reserve University; management.
- O'Toole, Dennis M. *Associate Professor and Associate Dean for External Affairs* Ph.D., Ohio University; money and banking.
- Pearce, C. Glenn *Associate Professor* Ph.D., Georgia State University; business education and office administration.
- Pentico, David W. *Associate Professor* Ph.D., Carnegie-Mellon University; management science.
- Pratt, Michael D. *Assistant Professor* Ph.D., University of Kansas; urban economics.
- Rasnic, Carol *Assistant Professor* LL.B., Vanderbilt University; business law.
- Reilly, Robert J. *Assistant Professor* Ph.D., University of Tennessee; microeconomic theory.
- Riehl, Julian William *Assistant Professor* D.B.A., George Washington University; information systems.
- Rimler, George W. *Professor* D.B.A., Georgia State University; management.
- Ryan, Lanny J. *Visiting Associate Professor* Ph.D., North Texas State University; information systems.
- Sharshar, Abdelaleem M. *Associate Professor* Ph.D., George Washington University; applied microeconomic theory.
- Shin, Tai S. *Professor* Ph.D., University of Illinois; finance.
- Sleeth, Randall G. *Assistant Professor* Ph.D., University of Massachusetts; management.
- Smith, Alfred L., Jr. *Assistant Professor* LL.M., New York University; business law.
- Smith, Charles H. *Assistant Professor* Ph.D., University of Maryland; management science.
- Snellings, Eleanor C. *Associate Professor* Ph.D., Duke University; microeconomic theory.
- Spede, Edward C. *Assistant Professor* Ph.D., Virginia Polytechnic Institute and State University; C.P.A.; accounting.
- Sperry, John B. *Professor and Chairman* Ph.D.,

- American University; C.P.A.; accounting.
- Spinelli Michael A. *Associate Professor* Ph.D., West Virginia University; management science.
- Spring, Marietta *Assistant Professor* Ed.D., Virginia Polytechnic Institute and State University; business education and office administration.
- Sutherland, John W. *Professor* Ph.D., University of California at Los Angeles; information systems.
- Taylor, Robert D., Jr. *Assistant Professor* D.B.A., University of Colorado; C.P.A.; accounting.
- Thompson, Thomas W. *Associate Professor* Ph.D., George Washington University; financial marketing and macro-marketing.
- Thornton, Jack E. *Professor Emeritus* Ph.D., University of North Carolina; finance.
- Tondkar, Rasoul H. *Assistant Professor* Ph.D., North Texas State University; accounting.
- Tucker, Woodie L., *Professor* Ph.D., University of Pittsburgh; business education and office administration.
- Turshen, I. Jeffrey *Assistant Professor* Ph.D., University of Virginia; management science.
- Wetzel, James N. *Associate Professor* D.Com., University of North Carolina; environmental economics.
- Wijnholds, Heiko de B. *Associate Professor and Acting Chairman* D. Com., University of South Africa; marketing strategy and international marketing.
- Willis, H. David *Associate Professor* M.Ed., Virginia Polytechnic Institute and State University; accounting.
- Wilson, Howard B. *Assistant Professor* Ph.D., University of Denver; information systems.
- Wood, D. Robley, Jr. *Associate Professor* D.B.A., University of Tennessee; management.
- Wynne, A. James *Associate Professor and Chairman* Ph.D., University of Nebraska; information systems.
- Yoo, Jang H. *Professor* Ph.D., Texas A. and M. University; macroeconomic theory.

MASTER OF ACCOUNTANCY

The Master of Accountancy degree is designed to provide training for professional positions in public accounting (CPA firms), government, and industry. The required courses provide a diversified background in functional and support areas which are important for any business-related advanced study. The electives are consistent with the philosophy that graduate students should develop individual academic specialties and should develop the ability to work independently in pursuit of their goals.

The degree requires a minimum of 30 semester credits distributed over core courses and restricted electives. Foundation courses represent prerequisites for the advanced courses. Some or all of the foundation courses may be waived for students having satisfactory equivalent preparation.

DEGREE REQUIREMENTS

Foundation Courses	Credits
BUS 607 Financial Accounting	3

BUS 303-304 Financial Accounting I and II (Intermediate)	6
BUS 306 Cost Accounting	3
BUS 404 Financial Accounting III (Advanced) ..	3
BUS 405 Tax Accounting	3
BUS 406 Auditing	3
BUS 411 Accounting Opinions and Standards ...	3
BUS 481 Law for Accountants I	3
BUS 660 Business Information Systems	3
BUS 624 Statistical Elements of Quantitative Management	3
ECO 600 Concepts in Economics	3
BUS 620 Financial Concepts of Management ...	3
BUS 670 Concepts and Issues in Marketing	3
BUS 640 Management Theory and Practice	3

The above courses must be taken prior to taking the advanced courses.

Advanced Courses	Credits
Core Area	24
Electives	6
	30

A. Required

ECO 610 Managerial Economics or Bus 642 for students that have not had a policy course previously	3
BUS 645 Operations Research OR Bus 648 Managerial Decision Making	3
BUS 690 Business Research Seminar	3
BUS 601 Accounting Theory	3
BUS 603 Environment of Accounting	3
BUS 602 Managerial Accounting: Cases and Topics	3
BUS 604 Auditing	3
BUS 682 Taxation of Corporations and Shareholders	3

B. Electives (Select 6 credits)

Bus 605 Accounting for Governmental and Not-For-Profit Entities	3
BUS 606 International Accounting	3
BUS 661 Information Systems Development	3
BUS 662 EDP Auditing	3
Approved 600/700 level business or economics elective	3

MASTER OF ARTS DEGREE IN ECONOMICS

The Master of Arts degree in economics is designed to provide training for business and government economists, for those now teaching in secondary schools or in junior colleges, and for those who plan further study at the doctoral level. The required courses provide a firm foundation in economic theory, while the electives permit students to concentrate in the field of their choice.

The program provides both a thesis and a

non-thesis option. Both options require 30 semester hours of work. Each student's program must be approved by both the advisor and the associate dean for graduate studies in business.

Under the THESIS option 30 hours are to be distributed over the following areas.

1. CORE AREA (15 credits)

	<i>Credits</i>
ECO 604 Advanced Microeconomic Theory	3
ECO 607 Advanced Macroeconomic Theory	3
ECO 612 Econometrics	3
ECO 798-799 Thesis	6

2. ELECTIVES (15 credits)

The additional 15 credits, at least nine of which must be in the Department of Economics, must be elected from graduate-level courses.

Under the NON-THESIS option the 30 required hours are to be distributed over the following areas.

1. CORE AREA (12 credits)

	<i>Credits</i>
ECO 604 Advanced Microeconomic Theory	3
ECO 607 Advanced Macroeconomic Theory	3
ECO 612 Econometrics	3
ECO 690 Seminar in Economic Methodology and Research	3

2. ELECTIVES (18 credits)

The additional 18 credits, at least 12 of which must be in the Department of Economics, must be elected from graduate-level courses.

Students admitted to the Master of Arts program must have completed 12 semester credits of economics courses or their equivalent in quarter credits, including principles of economics, microeconomic theory, and macroeconomic theory. A knowledge of mathematics and statistics sufficient for the study of econometrics and the advanced theory courses must be acquired before those courses may be attempted. The student's advisor will review the student's economics and mathematical background and will determine the necessary prerequisites.

MASTER OF BUSINESS ADMINISTRATION PROGRAM

The Master of Business Administration program is designed for students with diverse undergraduate backgrounds. It is a program suitable for both nonbusiness and business graduates. Normally, it is a two-year program for graduates of the curricula in the arts and humanities, in engineering,

and in the sciences. With an undergraduate degree in business, a person can complete the program in one year of full-time study.

The aim of the M.B.A. program is to prepare persons for the administration of an enterprise and for the responsibilities of management in a wide variety of business endeavors. The program is intended to develop a knowledge of the functions and techniques of management, as well as an understanding of environmental and economic forces that influence administration and decision making. The emphasis is on breadth of outlook rather than on specialization.

Students who have had no undergraduate work in business must earn 54 semester credits to fulfill requirements for the degree. Included are 24 credits of foundation courses designed to provide preparation comparable to the professional core in the undergraduate curriculum of the School of Business. Some, or all, of these foundation courses may be waived for students who present satisfactory, equivalent preparation. A minimum of 30 credits of advanced graduate courses will be required of all students. All courses must be at the 600 level or higher.

DEGREE REQUIREMENTS

Foundation Courses¹	<i>Credits</i>
BUS 660 Business Information Systems	3
BUS 624 Statistical Elements of Quantitative Management	3
ECO 600 Concepts in Economics	3
BUS 607 Financial Accounting	3
BUS 620 Financial Concepts of Management . . .	3
BUS 630 Fundamentals of the Legal Environment of Business	3
BUS 670 Concepts and Issues in Marketing	3
BUS 640 Management Theory and Practice	3
	24

Advanced Courses

BUS 608 Managerial Accounting Concepts	3
BUS 645 Operations Research	3
ECO 610 Managerial Economics	3
BUS 641 Organizational Behavior	3
BUS 621 Advanced Financial Management	3
BUS 671 Marketing Management	3
BUS 661 Information Systems Development . . .	3
BUS 642 Business Policy	3
Approved Business or Economics Electives	6
	30
TOTAL	54

¹These foundation courses may not be included in the 30 semester credits of advanced work required for any of the master's degrees offered by the School of Business.

Unless warranted by circumstances beyond the control of students, the above courses must be taken in the order given above. Approval of the advisor and associate dean for graduate studies is needed.

MASTER OF SCIENCE DEGREE IN BUSINESS

The Master of Science degree program is designed to be flexible enough to meet a variety of needs. It provides advanced professional education for those now engaged in, or preparing for, managerial positions. It also offers appropriate graduate education for those now teaching or contemplating future graduate work. The work that is required of all candidates gives a broad approach to improving understanding of the principles of business management and economics that are important in any of the business fields. The elective part of the program is in keeping with the philosophy that graduate students should develop the ability to work independently in pursuit of their own goals. The elective portion of this program also allows students to specialize in a particular area of business. Concentrations are available in the following areas:

- Business Education
- Economics
- Finance
- Information Systems
- International Business
- Management
- Marketing
- Personnel and Industrial Relations
- Quantitative Methods
- Real Estate and Urban Land Development
- Risk Management and Insurance

Business Education

The Master of Science degree provides a major concentration in business education. This program offers advanced professional education for teaching and for supervisory and administrative positions in secondary schools and community colleges.

Economics

The concentration in economics requires at least 12 credits in economics, including ECO 604 Advanced Microeconomics and

ECO 607 Advanced Macroeconomics. Students may do general work in economics, or they may choose a limited concentration such as public policy, finance, applied microeconomics, or mathematical economics. Students are encouraged to elect some related courses in other fields. Students are required to get approval of their academic program in advance from the graduate student advisor in the Department of Economics and from the associate dean for graduate studies, School of Business.

Finance

The finance concentration is designed to prepare students for numerous positions in financial management in commercial, industrial, financial, and governmental institutions.

It consists of courses in advanced financial management, advanced financial theory, funds management in financial institutions, security analysis, and portfolio management. Supporting courses may be taken in accounting and economics.

Information Systems

Master of Science students may concentrate in the information systems area by taking courses at the graduate level within the particular area of concentration desired; for example, computer programming, systems analysis and design, hardware/software, and information systems administration.

Depending upon academic background and work experience, additional undergraduate course work in the field of information systems may be required up to a maximum of 15 hours.

Marketing

The marketing concentration is intended for those who wish to practice management with a strong emphasis on marketing. Specializations are available in consumer behavior, marketing research, and the strategic aspects of marketing.

Personnel and Industrial Relations

The Masters of Science with a personnel and industrial relations concentration is designed to prepare students to deal with the

ever-changing personnel and industrial relations problems in various organizations. It allows flexibility for inclusion of courses in business, economics, psychology and sociology, as well as other courses.

Quantitative Methods

This concentration prepares students for a conceptual understanding of the quantitative methods that are used successfully in many business environments and simultaneously provides sophistication in the application of these techniques. BUS 632, 645, 648 and 668 are the nucleus of the program. Additionally, a restricted number of approved quantitative courses can be selected from the Departments of Economics, Biostatistics, or Mathematical Sciences.

Real Estate and Urban Land Development

Tomorrow's leaders in the complex and challenging field of real estate must obtain a clear understanding of the effects of inter-related land use activities and how these activities are best developed, coordinated, analyzed, financed, and marketed. Providing this knowledge is a major objective of this concentration, which integrates studies with actual contemporary urban real estate and land development issues. The university's urban environment provides an excellent "real world" laboratory for student research.

Risk Management and Insurance

This concentration is designed to increase one's effectiveness in establishing policies and making decisions concerning risk management and insurance in organizational and individual settings. Advanced courses utilize an applied management approach, covering technical aspects of risk management and insurance, internal management of insurance organizations, and cases on consumer uses of insurance.

MASTER OF SCIENCE DEGREE REQUIREMENTS

Students who have had no undergraduate work in business or economics must earn a minimum of 54 credits to fulfill requirements for the degree. Included are 24 credits of foundation courses designed to provide preparation comparable to the professional

core in the undergraduate curriculum of the School of Business.² Some, or all, of these foundation courses may be waived for students who present satisfactory equivalent preparation. A minimum of 30 credits of advanced graduate courses will be required of all students.

DEGREE REQUIREMENTS

Foundation Courses ³	Credits
BUS 660 Business Information Systems	3
BUS 624 Statistical Elements of Quantitative Management	3
ECO 600 Concepts in Economics	3
BUS 607 Financial Accounting	3
BUS 620 Financial Concepts of Management . . .	3
BUS 630 Fundamentals of the Legal Environment of Business	3
BUS 670 Concepts and Issues in Marketing	3
BUS 640 Management Theory and Practice	3

Unless circumstances beyond the control of the student warrant it, the above courses must be taken prior to taking advanced courses and in the order given above.

Each student must complete an M.S. program to be approved by both the advisor and the associate dean for graduate studies in business. The 30 semester credits of advanced work must be distributed over the following three areas:

1. CORE AREA (9 credits)

All students must complete a minimum of three semester credits in each of the following areas, with one exception noted under THESIS OPTION. The specific courses to be taken in these areas will be determined by each student's background and professional objectives: economics, quantitative techniques, and research (or BUS 642, if applicable). Students who have not had a policy class at the undergraduate level are required to take BUS 642.

2. RESTRICTED ELECTIVES (9 credits)

All students must complete three semester credits in each of three of the following fields: accounting, business education, eco-

²Some concentrations (e.g., accounting, economics, information systems, real estate and urban land development, and taxation) have additional special prerequisites. Please consult the Office of Graduate Studies in Business.

³These foundation courses may not be included in the 30 semester credits of advanced work required for any of the master's degrees offered by the School of Business.

nomics, finance, industrial relations, information systems, insurance, international business, management, marketing, quantitative techniques, real estate and urban land development, and taxation.

3. ELECTIVES (12 credits)

With the approval of their advisors and the associate dean for graduate studies in business, students may concentrate these 12 credits in the area of concentration or related areas.

THESIS OPTION: Students interested in writing a thesis may take six course credits in Area 3 plus BUS 798-799 Thesis. If a student elects to write a thesis and has already acquired an adequate knowledge of research techniques, the student may, with the permission of the advisor and the director of graduate studies in business, omit the research requirement in Area 1 and replace it with an additional three-credit elective.

MASTER OF TAXATION

The Master of Taxation degree is designed to prepare individuals for positions in the specialized professional area of taxation within public accounting, private or industrial accounting, trust and fiduciary accounting, and governmental accounting. The field of taxation is very broad and includes not only income taxes for individuals, corporations, estates, and trusts but also estate and gift taxes, estate planning, pensions, and profit-sharing plans. The degree program is designed to develop both a conceptual understanding and a sound technical knowledge necessary for professional specialization in taxation. The program provides a thorough treatment of tax laws and regulations, tax research, and tax practices and procedures needed within the purview of accounting.

The degree requires a minimum of 30 semester credits distributed over core courses, restricted electives, and individual electives. Foundation courses represent prerequisites for the advanced courses. Some or all of the foundation courses may be waived for students having satisfactory equivalent preparation.

DEGREE REQUIREMENTS

Foundation Courses	Credits
BUS 607 Financial Accounting	6

BUS 303-304 Financial Accounting I and II (Intermediate)	6
BUS 306 Cost Accounting	3
BUS 404 Financial Accounting	3
BUS 405 Tax Accounting	3
BUS 406 Auditing	3
BUS 410 Advanced Tax Accounting	3
BUS 481 Law for Accountants I	3
BUS 660 Business Information Systems	3
BUS 624 Statistical Elements of Quantitative Management	3
ECO 600 Concepts in Economics	3
BUS 620 Financial Concepts of Management	3
BUS 670 Concepts and Issues in Marketing	3
BUS 640 Management Theory and Practice	3

The above courses must be taken prior to taking the advanced courses.

Advanced Courses	Credits
Core Area	12
Taxation Electives	12
Electives	6
	<hr/> 30

A. Core Area

ECO 616 Advanced Public Finance or BUS 642 for students that have not had a policy course previously	3
BUS 645 Operations Research or BUS 648 Management Decision Making	3
BUS 680 Research in Federal Taxation	3
BUS 682 Taxation of Corporation and Shareholders	3

B. Taxation Electives (Select 12 credits)

BUS 679 Case Studies in Federal Income Taxation	3
BUS 681 Tax Administration and Procedure	3
BUS 683 Corporate Reorganizations and Collapsible Corporations	3
BUS 684 Taxation of Partnerships and Selected Organizations	3
BUS 685 Taxation of Property Transactions	3
BUS 686 Tax Aspects of Pensions, Profit-Sharing, and Deferred Compensation Plans	3
BUS 687 Income Taxation of Estates and Trusts	3
BUS 688 Estate and Gift Taxation	3
BUS 689 Taxation in Estate Planning	3

C. Electives (Select 6 credits)

Any 600 level accounting course except BUS 607 or 608

BUS 621 Advanced Financial Management	3
BUS 626 Property and Liability Insurance	3
BUS 627 Urban Land Development	3
BUS 629 Real Estate Feasibility Analysis	3
BUS 635 Investments and Security Analysis	3
BUS 638 Real Property Investment Law	3
Approved 600 or 700 level Business or Economics Elective	3

PH.D. IN BUSINESS

The Ph.D. program is designed to develop

the intellectual capabilities necessary for careers in teaching and research and for leadership in business, government, education, consulting, or research organizations. The program offers a research degree designed to provide the graduates with an in-depth research experience in dealing with theoretical and applied business topics.

In addition to completing required course work, students must pass both written and oral comprehensive examinations and complete an acceptable dissertation. Scholarship, innovation, and academic excellence are expected of all Ph.D. students.

Admission

Admission will be restricted to those who are considered by the Admissions Committee to possess academic and professional qualifications necessary to succeed in the program and to make a contribution to the profession. Criteria considered will include, among other things, performance at the bachelor's and graduate levels, GMAT scores, letters of recommendation, academic and business experience, and personal interviews, where appropriate. Each student is required to have a master's degree in business or its equivalent and must have completed the basic foundation courses in business including business policy.

Enrollment in the program is open to qualified persons without regard to age, race, sex, religion, physical handicap, or national origin, and admission requirements are in compliance with all applicable federal and state statutes, orders, and regulations. Admission to the doctoral program is limited by the number of places available. Consequently, qualified applicants may be denied admission because of insufficient space and resources. Admission is highly competitive, and preference is given to qualified applicants who demonstrate serious purpose, scholastic excellence, superior preparation, and appropriate experience for the program.

Course Work

Each student will be required to have completed, prior to acceptance, a minimum of one course that covers intermediate algebra and calculus. Each student's previous course work and preparation will be taken into consideration. A specific program will be

developed based upon the student's needs. Qualifying examinations will be used, when appropriate, to determine the extent of the student's competency in various subject areas.

In addition to the initial admission requirements, students are required to have had at least one course at the master's level in each of the following areas; accounting, information systems, organization behavior, quantitative management, financial management, marketing, and economics. Students who do not meet this requirement will be required to take additional courses.

The following courses beyond those required at the master's level will be required for the Ph.D. degree.

	<i>Credits</i>
ECO 604 Advanced Microeconomic Theory	3
ECO 607 Advanced Macroeconomic Theory	3
BUS 656 Applied Multivariate Methods (ECO 612 is required, instead, for economics majors)	3
BUS 701 Research Methods in Business	3
Five Courses in the major area	15
Three courses (9 semester credits) in each of the two minor areas	18
	45
BUS 898 Dissertation (Minimum of 12 credits) . .	12
Total	57

Students who select a major area other than that in which they have received their bachelor's or master's degree may be required to take additional courses to cover any deficiencies. Accounting and information systems are fields where such deficiencies are most likely to occur.

A minimum of 12 semester credits in the major area and 6 credits in each of the minor areas must be completed at Virginia Commonwealth University after entry into the Ph.D. program.

Specialty Tracks

Each student must select a major in one of the following specialties:

1. Accounting/Taxation
2. Economics
3. Finance
4. Information Systems
5. Management
6. Management Science
7. Personnel and Industrial Relations

Additionally, students must select two different minors from the specialities listed above or the following:

1. Business Education
2. Marketing
3. An approved field outside the School of Business in a school or a department that offers a doctoral program. This option must have the prior approval of the Admissions Committee and the associate dean for graduate studies in business.

Advising and Evaluation

Each student will be assigned an advisory committee. The student's original program and any subsequent changes must be approved by the committee and the associate dean for graduate studies in business. A file will be maintained on all students in the Graduate Studies in Business Office where their progress will be monitored and coordinated.

Comprehensive Examinations and Admission to Candidacy

Written and oral examinations are required in the major and minor fields upon completion of course work. Students are admitted to candidacy for the degree after passing the written and oral examinations and successfully defending a dissertation proposal.

Dissertation

Each candidate will write a dissertation involving substantial independent and original research related to the major field. The dissertation committee is responsible for supervising the candidate's research and for verifying the significance and importance of the work. The candidate will be required to give a successful oral defense of the dissertation.

General Requirements for the Ph.D.

1. After admission to the Ph.D. program, students must maintain a minimum cumulative grade-point average of 3.0 in all course work attempted at Virginia Commonwealth University. Students who fall below that minimum will have one semester to make up that deficiency.
2. Students must register each semester

(summer sessions excluded) for continuation in the program. Students who fail to register each semester will be dropped automatically from the program and must reapply for reinstatement.

3. Even though the overall grade-point average is 3.0 or better, students may earn no more than two (6 credit hours) grades of C. Students who receive a grade of D or F will be dropped from the program.
4. The maximum time to complete all the requirements for the degree is seven calendar years from the date of entry into the program. The maximum time to complete the course work, pass the comprehensive examinations, and present an acceptable dissertation proposal is five years from the date of entry.
5. Doctoral study involves a devotion to independent study outside the classroom and interaction with the faculty and other students. During the period of advanced course work, students must complete at least nine credits each semester for a minimum of two consecutive semesters, one of which may be a summer session.
6. A maximum of nine semester credits may be transferred from another university and applied toward the Ph.D. course requirements. Transfer credit is given at the discretion of the associate dean for graduate studies in business after consultation with appropriate departmental or faculty representatives.

POST-BACCALAUREATE CERTIFICATE IN ACCOUNTING

The Post-Baccalaureate Certificate in Accounting is designed for students who hold bachelor's degrees in fields other than accounting and desire to continue their education beyond the undergraduate level but who do not aspire to a master's degree. Candidates for the certificate are required to complete a total of 45 hours including the courses presented below, or other equivalents, and to meet other academic standards. For information relating to the Cer-

tificate in Accounting Program, please contact the associate dean for graduate studies in the School of Business.

REQUIREMENTS

		<i>Credits</i>
BUS 205	Introductory Accounting Survey	3
BUS 303	Financial Accounting I (Intermediate)	3
BUS 304	Financial Accounting II (Intermediate)	3
BUS 306	Cost Accounting	3
BUS 404	Financial Accounting III (Advanced)	3
BUS 405	Tax Accounting	3
BUS 406	Auditing	3
BUS 407	Auditing Methods	3
BUS 410	Advanced Tax Accounting	3
BUS 411	Accounting Opinions and Standards	3
		<hr/> 30
BUS 260	Information Systems Concepts	3
BUS 301	Business Statistics	3
BUS 481-482	Law for Accountants I and II	6
BUS 487	Management Decision Methods	3

Bus 203-204 may be taken in lieu of Bus 205. Up to 15 credit hours of the non-accounting courses may be waived if equivalent courses have been completed. All transfer credits and waiver of courses must be approved by the Department of Accounting and the associate dean for graduate studies in business.

POST-BACCALAUREATE CERTIFICATE IN INFORMATION SYSTEMS

The Post-Baccalaureate Certificate in Information Systems (CIS) is designed for students who hold bachelor's degrees in fields other than information systems and who desire to continue their education beyond the undergraduate level but do not aspire to a master's degree. Candidates for the certificate are required to complete a total of 30 hours including the courses listed below, or their equivalents, with a minimum of 24 credit hours of study in information systems to be taken at Virginia Commonwealth University and to meet other academic standards. For information relating to the certificate in information systems program, please contact the associate dean for graduate studies in the School of Business.

The CIS program is designed to provide more than a basic knowledge of information

systems. Specifically, persons completing the program are expected to achieve competency in understanding information systems terminology, concepts, and principles; computer program design, writing, and testing; systems analysis/design through proper application and knowledge of current hardware and software; and planning and carrying out system development and the management of information systems.

Those acquiring these skills should be well received in terms of employment opportunities within the business community and within governmental organizations. Additionally, depending upon the particular mix of required courses and chosen electives, they should be well prepared to sit for the Certificate in Data Processing and Registered Professional Programmer Examinations given under the auspices of the Data Processing Management Association. Presented below are the courses included in the CIS program.

REQUIREMENTS

		<i>Credits</i>
BUS 260	Information Systems Concepts	3
BUS 361	Systems Analysis	3
BUS 362	Computer Hardware and Software Operations	3
BUS 363	Introduction to Programming	3
BUS 364	Applications Programming	3
BUS 365	Systems Design	3
BUS 367	Advanced Programming Design Techniques	3
BUS 464	Data Base Systems	3
		<hr/> 24
	CIS Electives	6
		<hr/> 30

CIS Electives

Select six credits from the following:

BUS 205	Introduction to Accounting	3
BUS 366	Computerware	3
BUS 460	Assembler Programming	3
BUS 461	System Project Planning	3
BUS 462	Control Programming	3
BUS 463	Computer Center Operations	1
BUS 463	Programming Laboratory-PL/1	1
BUS 463	Programming Laboratory- FORTRAN	1
BUS 463	Programming Laboratory- Assembler	1
BUS 463	Programming Laboratory- Simulation Languages	1
BUS 467	System Development Project	3
BUS 468	Direction and Coordination of I/S Organization	3

GRADUATE COURSES IN BUSINESS (BUS)

Each student who enrolls in BUS 624 or other quantitative courses, may be given a quantitative test at the beginning of the class to determine if the student's quantitative background is appropriate for that course.

Foundation courses may not be included in the 30 semester credits of advanced work required of any of the masters' degrees offered by the School of Business.

M.S. Students in all but the personnel and industrial relations concentration may take, with prior approval of the advisor and associate dean for graduate studies in business, a maximum of 6 credits in 400-level courses (BUS 461, 464, 468, 477, 493, ECO 402, 412, and 432).

600 Quantitative Foundation for Decision Making. Semester course; 3 lecture hours. 3 credits. Prerequisite: a basic course in introductory algebra. A survey of basic tools from algebra, differential and integral calculus, and their application in solving business problems. These topics also provide the necessary foundation for using and understanding more advanced quantitative procedures. May not be included in the 30 semester credits of advanced work required for any of the master's degrees offered by the School of Business.

601 Accounting Theory. Semester course; 3 lecture hours. 3 credits. Prerequisite: 15 hours of accounting or permission of instructor. The historical development of accounting thought and the way it has been influenced by social, political, and economic forces. Analysis of the structure and methodology emphasizes objectives, postulates, and principles. Income determination and asset equity valuation, in both theory and practice.

602 Managerial Accounting: Cases and Topics. Semester course; 3 lecture hours. 3 credits. Prerequisite: a basic course in managerial accounting, cost accounting, or permission of instructor. Advanced aspects of the use of accounting information in the management process. Cost-based decision making and control systems are related to short- and long-term objectives of the firm.

603 Environment of Accounting. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 601. The organization of the profession, its ethics and responsibilities and the impact of governmental and private sector organizations on current and emerging accounting issues. Areas covered will include FASB, AICPA, SEC, other governmental regulatory agencies, and current financial accounting topical issues.

604 Auditing. Semester course; 3 lecture hours. 3 credits. Prerequisite: a basic course in auditing or permission of instructor. Historical development of auditing theory, theory of evidence, special disclosure issues, ethical, legal, and social responsibilities of external and internal auditors.

605 Accounting for Governmental and Not-For-Profit

Entities. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 607 or equivalent. Budgeting, accounting, reporting, and related issues in governmental and non-profit organizations.

606 International Accounting. Semester course; 3 lecture hours. 3 credits. Prerequisite: six hours of accounting or permission of instructor. International dimensions of accounting; national differences in accounting thought and practice; problems and issues.

607 Financial Accounting. Semester course; 3 lecture hours. 3 credits. Financial accounting standards and procedures. Income determination and financial statement preparation for businesses. Business combinations, consolidations, and other complex business organizations. (This is a foundation course.)

608 Managerial Accounting Concepts. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 607 or equivalent. The use of accounting information contained in reports to management. The functions of planning, decision making, and control are studied as accounting data are reported through the firm's information system and in special analyses.

610 Business Education in Post-Secondary Institutions. Semester course; 3 lecture hours. 3 credits. Role of business education in community colleges, junior colleges, post-secondary vocational-technical schools, and private business schools. Teaching special student populations. Interaction with the business community. Designed specifically for business teachers.

611 Improvement of Instruction in Typewriting. Semester course; 3 lecture hours. 3 credits. This course is designed for experienced teachers and prospective teachers specializing in typewriting. It deals with the aims of the typewriting course, the relationship of typewriting to vocational and general education, available instructional materials, teaching aids and devices, current writings and developments, techniques for improving instruction, and practical application and demonstration at the typewriter.

612 Improvement of Instruction in Shorthand. Semester course; 3 lecture hours. 3 credits. This course is designed for experienced teachers and for prospective teachers specializing in shorthand. It deals with the aims of the shorthand and notehand courses; the relationship of shorthand and notehand to the vocational, college preparatory, and general curricula; available instructional materials; teaching aids and devices, including the most modern electronic equipment; current writings and developments; techniques for improving instruction; and demonstration lessons at critical points in the shorthand and transcription courses.

613 Current Practices in Accounting and Data Processing Programs. Semester course; 3 lecture hours. 3 credits. Prerequisite: for business teachers only. Content selection, resource materials, and the integration of bookkeeping, data processing, and clerical accounting in block programs.

614 Readings in Business Education. Semester course; 3 lecture hours. 3 credits. This course offers the student an opportunity to become thoroughly conversant with significant current literature. It will involve critical evaluation of an extensive selection of materials

representative of research and other writing in the field of business education.

616 Advanced Office Administration. Semester course; 3 lecture hours. 3 credits. Designed to acquaint teachers with innovations in business offices. Includes methods, materials, and demonstrations related to the latest word processing and calculation techniques and equipment in up-to-date office systems.

617 Current Practice in Basic Business Education. Semester course; 3 lecture hours. 3 credits. Prerequisite: for business teachers only. Research findings, content selection, instructional materials, and current trends in teaching basic business subjects.

618 Trends in Business Education. Semester course; 3 lecture hours. 3 credits. Prerequisite: for business teachers only. Developments, contributions, and problems of business education in high school and college curricula; philosophy of vocational preparation, professional organizations, legislation, and other trends in the field.

619 Office Procedures in Block Programs. Semester course; 3 lecture hours. 3 credits. Prerequisite: for business teachers only. Current literature, research findings, and current practices in teaching office procedures in secondary schools.

620 Financial Concepts of Management. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 607 or 203-204. A study of the essential concepts of financial management including working capital management, capital budgeting, capital structure planning, and dividend policy. Not open to students who have completed BUS 311 or the equivalent. (This is a foundation course.)

621 Advanced Financial Management. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 311 or 620 or permission of instructor. Analysis of financial problems and policies of non-financial firms, including capital management, capital rationing and cost of capital, and capital structure.

622 Financial Management of Financial Institutions. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 620 or equivalent. Understanding and application of concepts relevant to the financial management of financial institutions.

623 Advanced Financial Theory. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 311 or 620 or permission of instructor. Advanced theories, concepts, major structural areas, and techniques for financial decision making.

624 Statistical Elements of Quantitative Management. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 600 or equivalent. Develops an ability to interpret and analyze business data in a managerial decision-making context. Managerial applications are stressed in a coverage of descriptive statistics, probability, sampling, estimation, hypothesis testing, and simple regression and correlation analysis. (This is a foundation course.)

625 Group Insurance and Pensions. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 333 or equivalent, or permission of instructor. Analysis of the

role and costs of employee benefits in the operation of the modern organization. Includes group life and health insurance, pension plans, and emerging benefit areas.

626 Risk Management. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 333 or equivalent. Property and liability risks faced by business and public institutions are studied. Insurance and alternative methods of treating these risks are analyzed and compared.

627 Urban Land Development. Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. A study of the development process; considering planning, financing, management, and marketing of real property.

628 Issues in Land Development. Semester course; 3 lecture hours. 3 credits. Considers spatial growth and the impact of regulations upon land use decisions.

629 Real Estate Feasibility Analysis. Semester course; 3 lecture hours. 3 credits. Housing demand forecasting, commercial site selection, and real estate investment analysis.

630 Fundamentals of the Legal Environment of Business. Semester course; 3 lecture hours. 3 credits. The legal environment of business with emphasis on the development of the law, contracts, sales, business organizations, and commercial paper. (This is a foundation course.)

631 Advanced Labor Law and Legislation. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 323 or permission of instructor. Advanced labor law and legislation with pertinent causal factors; administrative and juridical determination to date. Not open to students who have completed BUS 427.

632 Statistical Analysis. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 624 or equivalent. A business application-oriented coverage of statistical inference, analysis of variance, multiple regression and correlation, basic forecasting techniques, non-parametric tests, and other related procedures. Use of a computer statistical package will be included for most topics.

633 Issue in Labor Relations. Semester course; 3 lecture hours. 3 credits. The conceptual framework of labor relations; the interconnection between labor-management relations and the sociopolitical environment.

634 Advanced Labor Relations. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 633. The negotiation and administration of collective bargaining contracts; the handling of grievances.

635 Investments and Security Analysis. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 620 or equivalent. The process of investing in stocks and bonds, from the analysis of individual securities to portfolio formation and evaluation.

637 Advanced Personnel Administration. Semester course; 3 lecture hours. 3 credits. A critical analysis of the functions and problem areas related to personnel administration in a large organization; philosophy of personnel administration; employee recruiting, testing, and wage and salary administration and supplemental com-

pensation systems; manpower, training, and development; employee services; the legal environment of personnel administration.

638 Real Property Investment Law. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 323 or equivalent, or permission of instructor. Covers legal aspects of real property development from acquisition through disposition; emphasizes selection of appropriate ownership form, financing, operation, and tax considerations.

639 International Finance. Semester course; 3 lecture hours. 3 credits. A study of financial management of multinational enterprises, banks, firms with foreign subsidiaries, exporters, and service industries. Additionally, financing trade and investments, international money and capital markets, foreign exchange risks, and governmental policies will be covered.

640 Management Theory and Practice. Semester course; 3 lecture hours. 3 credits. Theories, principles, and fundamentals applicable to contemporary management thought and productive activities. (This is a foundation course.)

641 Organizational Behavior. Semester course; 3 lecture hours; 3 credits. Prerequisite: BUS 640 or equivalent, or permission of instructor. An advanced course in management, involving theories and models aimed at developing the managerial competencies needed to analyze, understand, predict, and guide individual, group, and organizational behavior.

642 Business Policy. Semester course; 3 lecture hours. 3 credits. Must be taken after completion of all foundation courses plus 15 credits of advanced courses. Integration of principles and policies of business management from the fields of accounting, economics, marketing, finance, statistics, and management in the solution of broad company problems and in the establishment of company policy. Emphasis on interaction of disciplines in efficient administration of a business. Course employs case analysis approach.

643 Systems Management. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 640 and 641 or equivalent, or permission of instructor. The application of systems theory and principles to the operation of contemporary organizations, with emphasis on non-quantitative methods of analysis.

644 International Business Management. Semester course; 3 lecture hours. 3 credits. Prerequisite: completion of foundation courses. Survey course for students interested in international and multinational management. Review of historical, governmental, monetary, and cultural issues affecting the transfer of resources and management knowledge across national boundaries; multinational business and management strategies; study of management practices in selected countries.

645 Operations Research. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 624 or equivalent. Business problems in production, inventory, finance, marketing, and transportation translated into mathematical models: strengths and weaknesses of such translations. Solution procedures and their limitations.

646 Personnel Law. Semester course; 3 lecture hours. 3 credits. This course examines the laws concerning human resources in organizations, Equal Employment Opportunity, wage and hour laws, Equal Pay Act, the Employees Retirement Income Security Act, the Occupational Safety and Health Act, and employee personal rights laws are emphasized.

647 Public Sector Collective Bargaining. Semester course; 3 lecture hours. 3 credits. This course examines the development, practices, and extent of collective bargaining in the public sector. Analysis of labor issues at federal, state, and local government levels with emphasis on public sector policy issues.

648 Managerial Decision Making. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 624 or equivalent. Formal analytical techniques used by organizations in reaching decisions. The concepts of both classical and Bayesian decision methods will be examined. The emphasis is on the application of a decision-theoretic approach to solving problems in contemporary organizations.

649 History of Management Thought. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 640. Traces the history of management from its beginnings to current approaches and theories.

650 Theories and Research in Motivation and Leadership. Semester Course; 3 lecture hours. 3 credits. Prerequisite: BUS 641 or equivalent. Critical examination of significant research and application of motivation and leadership concepts in the organization context.

651 Administrative Communication. Semester course; 3 lecture hours. 3 credits. Application of business communication theory to the administrative process. The relationship of business communication to administrative functions, training, word/information processing, and other administrative situations.

652 Advanced Business Communication. Semester course; 3 lecture hours. 3 credits. Development of skill in planning and writing business reports and other shorter written communications, conducting business research, delivering oral presentation, and using business communication media.

653 Competency-Based Business Education. Semester course; 3 lecture hours. 3 credits. An introduction to the principles and characteristics of competency-based business education. Designed for business teachers in secondary schools who have had no previous instruction in competency-based concepts. Utilization of standardized materials for improving classroom instruction will be stressed.

654 Topics Seminar in Business Education and Office Administration. Semester course; 3 credits. Prerequisite: permission of department chairman. In-depth treatment within a seminar format of a timely topic in business education and office administration. The topic may vary from semester to semester.

655 Advanced Operations Research. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 645 or equivalent. Advanced discussion of topics in mathematical programming and network analysis as applied to organizational decision making. Includes network

flows, integer, nonlinear, and dynamic programming, and multicriteria optimization. Emphasis on applications and the use of the computer for problem solving.

656 Applied Multivariate Methods. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 632 or equivalent. Study of multivariate statistical methods frequently used in organizational applications including tests on mean vectors, MANOVA, discriminant analysis, principal components and factor analysis. The focus is on applying these techniques to active problems.

657 Corporate Strategy and Long-Range Planning. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 642 or equivalent. Analysis and evaluation of current methods and research in the areas of corporate strategy and long-range planning.

658 Capital Budgeting Decisions. Semester course; 3 lecture hours. 3 credits. Prerequisites: all foundation courses, 12 hours of graduate business courses, and one advanced finance course, or permission of instructor. Methods and techniques of capital budgeting under certainty, risk, and uncertainty. Administrative aspects, capital acquisition, and special problem areas and applications within the firm will be discussed.

659 Portfolio Theory and Management. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 624 and 635 or equivalent. A study of current theory of valuation and performance of portfolios, focusing on models to express the risk/return characteristics of the portfolio. Will include models for portfolio selection and for evaluation of managed portfolios.

660 Business Information Systems. Semester course; 3 lecture hours. 3 credits. Introduces computer organization, programming, computers in management decision making, and systems analysis and design. Not open to students who have completed BUS 260 or the equivalent. (This is a foundation course.)

661 Information Systems Development. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 660 or equivalent. (not open to those concentrating in information systems). Familiarizes students with the concepts and methodologies inherent in design and development of management information systems.

662 EDP Auditing. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 604 and either 661 or 665 or equivalent courses. Concepts and applications of EDP auditing, including the audit of data processing facilities, systems, controls, and accounting records.

663 Direction and Control of Information Systems Organizations. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 640 and 660 or equivalents. A study of management concepts, tools, and techniques as applied to information systems personnel and organizations. Emphasis will be placed on techniques and tools for efficient control and utilization of data processing resources to include use of feasibility studies, standards, cost/benefit analyses, and acquisition methods for both hardware and software systems.

664 Topics in Information Systems. Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. Study of current topics of concern to ad-

ministrators of information systems organizations. Covers technical, management, and policy subjects.

665 Advanced Systems Analysis and Design. Semester course; 3 lecture hours. 3 credits. A required course for those concentrating in information systems. Prerequisites: BUS 362, 363, 364, 365, 367, and 645 or 648 or equivalent.

666 Computer Performance Evaluation. Semester course; 3 lecture hours. 3 credits. Prerequisite BUS 645 or 632. Methodology and use of hardware and software tools for the evaluation of computer-based information systems including people and machine productivity.

667 Distributed and Teleprocessing Systems. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 362, 363, 364, 365, 367 and 645 or 648 or equivalent. Computer network design, communication carriers and tariffs, communication line control, and communication hardware and software.

668 Computer-aided Decision Making. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 362, 363, 364, 365, and 645 or equivalent. Familiarity with programming languages. Use of computers in modeling and solution of managerial decision-making problems.

669 Forecasting Methods for Business. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 624 or equivalent that includes simple regression. A presentation of forecasting methods and applications for managerial decision making in business and other organizations. Coverage includes selection of appropriate methods and issues involved in developing and implementing forecasting models. Techniques covered include smoothing, seasonal adjustment, time series (Box-Jenkins) and judgmental methods.

670 Concepts and Issues in Marketing. Semester course; 3 lecture hours. 3 credits. Designed for graduate students with little or no undergraduate education in marketing. A study of the philosophy, environment, and practice of contemporary marketing. (This is a foundation course.)

671 Marketing Management. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 670 or equivalent. Detailed study of concepts and procedural alternatives in the delineation of the market target, the development and implementation of the marketing mix, and the control and analysis of the total marketing effort.

672 Concepts in Consumer Behavior. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 670 or equivalent. A study of the pertinent psychological, sociological, and anthropological variables that influence consumer activity and motivation.

673 Marketing Research. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 624 and 670 or equivalents. A discussion of the techniques of marketing research. Special emphasis will be given to marketing problem definition, determination of information needs, and current methods of analysis of marketing data.

674 Cases in Operations Research. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 608, 645 and completion of foundation courses or equivalent. In-

tegrates and applies prior instruction in operations research. Provides experience in the use of operations research techniques for solving organizational problems through the analyses of cases and management simulations. Use of computer packages will be emphasized.

675 Operations Management. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 640 and 645 or equivalent. A systematic investigation of the concepts and issues in designing, operating, and controlling productive systems in both manufacturing and services. Emphasis is placed on modeling for problems in location and layout, scheduling, production and inventory control, quality control, work design, and maintenance.

676 Marketing Strategy. Semester course; 3 lecture hours. 3 credits. Prerequisites: all foundation courses, BUS 671 and 673 or equivalents. Application of marketing concepts and techniques to real-world situations. Development of a marketing plan designed to effectively market a new or existing product or service.

677 Topics In Operations Management. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 675 or equivalent. An advanced analysis of one or more topics in operations management, selected from production and inventory planning and control, quality control, facility location and layout, job design and measurement, scheduling, and maintenance.

678 Accounting Controls for Not-for-Profit Organizations. Semester Course; 3 lecture hours. 3 credits. This course is for nonbusiness students who have a need to understand and use accounting information in their professions. The basics of compiling and analyzing financial information for governmental and other not-for-profit entities will be reviewed. In addition, the use of accounting as a control method in these entities will be studied. Students will be required to investigate ways accounting relates to their particular areas of interest. May not be included in the 30 semester credits of advanced work required for any of the master's degrees offered by the School of Business.

679 Case Studies in Federal Income Taxation. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 410 or equivalent. Tax problems of corporate liquidation, corporate reorganization, collapsible corporations, and corporate capital structure.

680 Research in Federal Taxation. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 410 or equivalent. Tax research methodology; the sources of tax law and their relationship to tax research.

681 Tax Administration and Procedure. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 680. The administrative processes within the Internal Revenue Service and the practices and procedures involved and/or available for the settlement of tax controversies.

682 Taxation of Corporations and Shareholders. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 410 or equivalent. Corporate tax laws as related to the corporations involved and to individual shareholders; tax aspects of the creation, operation, reorganization, and partial liquidation of corporations; corporate distributions.

683 Corporate Reorganizations and Collapsible Corporations. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 682. Continuation of the study of corporate taxation, with emphasis on corporate liquidations and reorganizations as well as collapsible corporations.

684 Taxation of Partnerships and Selected Organizations. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 680. Tax problems related to operations of the partnership; entry of a new partner; withdrawal of a partner; payments to partners. Also, tax problems of tax exempt organizations, private foundations, and other special corporate forms.

685 Taxation of Property Transactions. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 405. Tax problems and elections relating to acquisition, holding, and disposition of property. Tax planning in relation to comparisons of sales and exchanges as methods of acquiring and disposing of property; study of Section 1245, 1250, and 1231.

686 Tax Aspects of Pensions, Profit-Sharing and Deferred Compensation Plans. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 682. Tax laws as related to pensions, profit-sharing, and deferred compensation plans, and the tax consequences related thereto for individuals and businesses.

687 Income Taxation of Estates and Trusts. Semester course; 3 lecture hours. 3 credits. Prerequisites: BUS 680. Tax laws relating to trusts, *inter vivos* and testamentary, and to estates. Tax planning will be stressed.

688 Estate and Gift Taxation. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 680. Concepts of gross estate, marital deduction, powers of appointment, gross gifts, exclusions, deductions, and credits; tax aspects of estate planning.

689 Taxation in Estate Planning. Semester course; 3 lecture hours. 3 credits. Prerequisite: BUS 688. Estate planning as it encompasses the acquisition, protection, and disposition of property; the role of the accountant in estate planning.

690 Business Research Seminar. Semester course; 3 lecture hours. 3 credits. This course is designed to provide research experience for candidates not following the BUS 798-799 program. (Approval of proposed work is required by the associate dean for graduate studies in business.)

693 Field Project. Semester course; 3 lecture hours. 3 credits. Students will work under the supervision of a faculty advisor in planning and carrying out a practical research project. A written report of the investigations is required. (To be taken at the end of the program. Approval of proposed work is required by the associate dean for graduate studies in business.)

697 Guided Study in Business. Semester course; 3 lecture hours, 1, 2, or 3 credits. Graduate students wishing to do research on problems in business administration or business education will submit a detailed outline of their problem. They will be assigned reading and will prepare a written report on the problem. (To be taken at the end of the program. Approval of proposed work is

required by the associate dean for graduate studies in business.)

701 Research Methods in Business. Semester course; 3 lecture hours. 3 credits. Prerequisite: acceptance in the doctoral program. Study of the scientific method as currently applied in business and organizational research, with emphasis on philosophy, design, execution, and presentation of empirically-based knowledge.

793 Doctoral Seminar. Semester course; 3 lecture hours. 3 credits. Prerequisite: open only to Ph.D. students in business. An advanced course dealing with general theories, practices, and functions of the student's area of specialization.

798-799 Thesis. Year course; 3 lecture hours. 6 credits. Graduate students will work under supervision in outlining a graduate thesis and in carrying out the thesis.

898 Dissertation Research. 3 to 12 credits. Limited to Ph.D. in business candidates.

DEPARTMENT OF ECONOMICS (ECO)

600 Concepts in Economics. Semester course; 3 lecture hours. 3 credits. Essential economic concepts including the price system, price determination in imperfectly competitive markets, employment theory, and monetary theory. Not open to students who have completed ECO 201 and 202 or the equivalent. (This is a foundation course.)

601 Contemporary Economic Problems. Semester course; 3 lecture hours. 3 credits. Prerequisite: ECO 201-202 or 600 or equivalent. An analysis of current economic issues. Not open to economics majors.

602 Comparative Economic Systems. Semester course; 3 lecture hours. 3 credits. Prerequisite: 9 semester hours of economics. Surveys the organization, operation, and performance of capitalism, socialism, and the centrally-planned economy.

603 History of Economic Thought. Semester course; 3 lecture hours. 3 credits. Prerequisite: 6 semester hours of intermediate micro and macroeconomics. A survey of the principal (contributions to the development of economic theory by leading economists from medieval times to the present.

604 Advanced Microeconomic Theory. Semester course; 3 lecture hours, 3 credits. Prerequisite: undergraduate course in intermediate microeconomic theory or theory of the firm. Theory of prices and markets; value and distribution. Partial and general equilibrium analysis.

605 Economic Development. Semester course; 3 lecture hours. 3 credits. Prerequisite: 12 semester hours of economics. Examination of problems of poverty and economic policies in developing countries. Areas considered are Southeast Asia, Middle East, Africa, and Latin America.

606 Urban Economic Problems. Semester course; 3 lecture hours. 3 credits. Prerequisite: ECO 600 or equivalent. A study of the location of economic activity, zoning, blight and unemployment, urban renewal, and redevelopment programs.

607 Advanced Macroeconomic Theory. Semester course; 3 lecture hours. 3 credits. Prerequisite: undergraduate course in macroeconomic theory. National income analysis, monetary and fiscal theory and policy, and general equilibrium analysis.

609 Advanced International Economics. Semester course; 3 lecture hours. 3 credits. Prerequisite: ECO 600 or equivalent. An advanced-level examination of why trade occurs, balance of payments concept and adjustment, international equilibrium, forward exchange, markets, international investment, and international organizations.

610 Managerial Economics. Semester course; 3 lecture hours. 3 credits. Prerequisite: ECO 600 or equivalent. Analysis of business decisions, applying tools of economic theory. Decisions on demand, production, cost, prices, profits, and investments.

612 Econometrics. Semester course; 3 lecture hours. 3 credits. Prerequisite: ECO 401 or equivalent or permission of instructor. Provides empirical content to the theoretical concepts of economics by formulating and estimating models. Introduction to simultaneous equation problems in economics and the studies of production, demand, and consumption functions.

614 Mathematical Economics. Semester course; 3 lecture hours. 3 credits. Prerequisite: ECO 403 or equivalent or permission of instructor. Economic analysis utilizing simple mathematical methods. Includes derivation and exposition of theories and the application of tools to widen the scope and increase the usefulness of economics.

616 Advanced Public Finance. Semester course; 3 lecture hours. 3 credits. Prerequisite: ECO 306 or equivalent or permission of instructor. Theory and application of public finance, including taxation, expenditures, and budgeting. Special attention to cost-benefit analysis and to intergovernmental relations in a federal system.

617 Financial Markets. Semester course; 3 lecture hours. 3 credits. Prerequisites: money and banking or intermediate macroeconomics. Theories of markets for loanable funds are related to empirical findings and institutional structures. Yields of financial assets, kinds of debt instruments, financial institutions, public policy, financial models, and the role of money and credit in economic growth are considered.

620 The Economics of Industry. Semester course; 3 lecture hours. 3 credits. Prerequisites: ECO 301, 303, or 610, or the equivalent. The application of economic analysis to the structure, conduct, and performance of industry; public regulation and policies to promote workable competition.

621 Topics in Economics. Semester course; 3 lecture hours. 3 credits. Prerequisite: ECO 600 or equivalent and permission of instructor. Study of specialized topic(s) in economics.

624 Health Economics. Semester course; 3 lecture hours. 3 credits. Prerequisite: ECO 600 or equivalent. Develops an understanding of (1) economics as a managerial tool in making choices or decisions that will provide for an optimum allocation of limited health

care resources and (2) economics as a way of thinking about and approaching issues of public policy in financing and organizing health and medical services. Individual research on crucial or controversial economic issues in the health field.

631 Labor Market Theory and Analysis. Semester course; 3 lecture hours. 3 credits. Prerequisite: ECO 600 or one year undergraduate Principles of Economics. The study of theories and applications designed to analyze wage rate, wage structure, and employment patterns. Studies exploring specific labor markets and problems will be examined.

682 An Economic Approach to Environmental Issues. Semester course; 3 lecture hours. 3 credits. Prerequisite: ECO 600 or equivalent. The effect of externalities in terms of efficiency and equity considerations. The role and problems of benefit-cost analysis in decision mak-

ing is developed. The interrelationship of air, water, and land quality issues is analyzed. The use rate of natural resources, energy consumption, and the steady-state economy and their impacts are evaluated.

690 Seminar in Economic Methodology and Research. Semester course; 3 lecture hours. 3 credits. Prerequisites: ECO 604, 607, and 612. Prior to enrollment, approval of the proposed work is required by the graduate advisor and the proposed thesis advisor. Familiarizes students with various research methodologies and research techniques, and provides in an elected field of economics, research experience and a survey of the literature.

798-799 Thesis in Economics. Year course; 3 lecture hours. 6 credits. Graduate students will work under supervision in outlining a graduate thesis and in carrying out the thesis.



PART VII—School of Community and Public Affairs

ADMINISTRATIVE OFFICERS

LAURIN L. HENRY, B.A., M.A., Ph.D.

Dean

ALVIN J. SCHEXNIDER, B.A., M.A., Ph.D.

Associate Dean

E. DAVIS MARTIN, JR., B.S., M.S., Ph.D.

Assistant Dean

The School of Community Services was established in 1969 in recognition of the need for interdepartmental and interdisciplinary approaches to solving human problems resulting from a rapidly urbanizing society. In 1981, the school changed its name to the School of Community and Public Affairs in order to reflect more accurately the nature and scope of its academic and professional activities.

The School of Community and Public Affairs offers the following degrees:

Administration of Justice and Public

Safety (M.S.)

Public Administration (M.P.A.)

Recreation (M.S.)

Rehabilitation Counseling (M.S.)

Urban and Regional Planning (M.U.R.P.)

Doctor of Public Administration (D.P.A.)

ADMISSION PROCEDURES

Applicants are responsible for submitting all required admission documents to University Enrollment Services, Graduate Admissions, Virginia Commonwealth University, 821 West Franklin Street, Richmond, VA

23284. These documents become the property of the university and are not returned to the applicants. After all required documents have been received, candidates will be notified of the decision of the department as soon as possible by the dean of the School of Graduate Studies.

Unless otherwise specified by the department, the application deadline for degree-seekers for the fall semester is August 1; the deadline for the spring semester is December 1. However, all applicants—especially those seeking financial aid—are urged to apply before March 1 in order to have the best chance of being accepted or receiving an award of financial assistance for the following academic year.

The following must be submitted to University Enrollment Services when applying for admission.

1. **Application Form.** Candidates seeking admission to the university in a graduate degree program must file graduate applications for admission before the specified deadline. Care should be taken to read the directions accompanying the application and to complete all information requested. Incomplete applications will result in a processing delay.
2. **Official Transcripts.** Two copies of the official transcript from an accredited institution showing that a bachelor's

degree was awarded must be submitted. In addition, official transcripts of all work undertaken beyond the bachelor's degree must be submitted. (Note: An "official" transcript includes the school seal affixed by the registrar. College seniors may be provisionally admitted to a graduate program on partial transcripts with the proviso that complete transcripts will be submitted upon completion of the bachelor's degree.

3. **Letters of Reference.** Three letters from persons qualified to give information concerning the applicant's promise of success in graduate study are required on official reference forms. Applicants who received their undergraduate degrees within the past five years are urged to request references from faculty members at their undergraduate institutions.
4. **Personal Letter.** Each applicant must submit a letter stating reasons for wanting to enter graduate study.
5. **Application Fee.** A nonrefundable application fee of \$10 in the form of a check or money order, payable to Virginia Commonwealth University, must be submitted with the application.
6. **Scholastic Aptitude Test (GRE) Scores.** Applicants must submit the results of the Aptitude Test (verbal and quantitative sections) of the Graduate Record Examination. Satisfactory GRE or other test scores are determined by the departmental admissions committees.

Applications for the GRE may be obtained from the School of Graduate Studies, University Enrollment Services, or from the Graduate Record Examination, Educational Testing Service, Box 955, Princeton, NJ 08540. (There are specific deadlines for registration for the examination.)

FULL ACCEPTANCE

Applicants are notified of the decision by the dean of the School of Graduate Studies.

PROVISIONAL ACCEPTANCE

Applicants who do not fully meet the requirements for admission may be accepted provisionally upon recommendation of the

department. The provisions for earning full acceptance are stated in the provisional acceptance letter sent to students by the dean of graduate studies.

SPECIAL STUDENTS

A special student in the School of Community and Public Affairs may not take more than a total of nine semester hours of course work as a special student without having formally applied for admission to a graduate program within the school, and no more than a total of 12 semester hours without having been accepted as a degree-seeking student in a graduate program in the school. For more than nine semester hours, the student must have the approval of the chairman of the department. Courses taken as a special student may not necessarily apply toward departmental degree requirements.

TRANSFER CREDIT

Graduate credits earned at other institutions must be approved by the department. See departmental descriptions for specific transfer provisions.

PART-TIME STUDY

Degree-seeking students may complete requirements for the degree by studying as full- or part-time students during the regular academic year and summer sessions.

ADVISING PROGRAM

Students admitted to any department in the School of Community and Public Affairs are assigned an advisor from the departmental faculty. In addition to academic counseling, the advisor is available for advice on other matters whenever students perceive a need.

EFFECTIVE BULLETIN

Students complete the degree programs listed in the bulletin effective at the time of admission to a graduate program.

Students in continuous enrollment may choose to stay with their original bulletin or change to a later issue, at their option, but must satisfy all requirements of either.

Doctor of Public Administration Program

Alvin J. Schexnider, Program Chairman
Leigh E. Grosenick, Program Director

FACULTY The graduate faculty of the School of Community and Public Affairs.

DPA PROGRAM COMMITTEE

Brown, John C. *Assistant Professor* Ph.D., University of Pittsburgh; urban finance and policy, economic development.

Fairholm, Gilbert W. *Associate Professor* D.P.A., State University of New York at Albany; organizational theory, applied behavioral science.

Farmer, David J. *Associate Professor and Chairman, Department of Administration of Justice and Public Safety* D.P.A., Nova University; criminal justice and police management.

Grosenick, Leigh E. *Professor* Ph.D., University of Minnesota; managerial ethics and public policy, local government, financial management

Hartsoe, Charles E. *Professor and Chairman, Department of Recreation* Ph.D., University of Illinois; administration, historical and philosophical foundations in recreation.

Henry, Laurin L. *Professor and Dean* Ph.D., University of Chicago; the American presidency, bureaucracy.

Luck, Richard S. *Assistant Professor* Ed.D., University of Virginia; supervision and administration.

Oliver, Robert B. *Assistant Professor* Ph.D., University of Virginia; organizational theory, research and evaluation.

Pak, Chong M. *Professor and Chairman, Department of Public Administration* D.P.A., University of Southern California; administrative and organizational theory, organizational behavior.

Schexnider, Alvin J. *Associate Professor and Associate Dean*, Ph.D., Northwestern University; urban politics, intergovernmental relations.

The Doctor of Public Administration (DPA) program is a school-wide degree program of the School of Community and Public Affairs. The teaching faculty is drawn primarily from the graduate faculty of the School of Community and Public Affairs, but also includes the graduate faculty members of other professional and academic schools at Virginia Commonwealth University. The multidisciplinary nature of the program enables students to utilize the talents of the entire VCU faculty as needed in individual programs.

As an advanced professional degree for public executives, the goal of the Doctor of

Public Administration program is to provide a quality education to a limited number of individuals who have demonstrated administrative abilities, executive potential intellectual capabilities, and a strong commitment to the public service. Those who complete the degree program will be educationally prepared to assume positions of executive and policy leadership in a variety of governmental and public-oriented organizations. The latter properly serves a more diverse group of executives in various professional and public service program fields where career aspirations require the acquisition of advanced management expertise and understandings.

REQUIREMENTS FOR ADMISSION

Applicants to the program must hold a master's degree or a recognized post-baccalaureate degree in one of the professions such as law or medicine from an accredited institution of higher education. In addition, applicants are expected to have had an appropriate public management professional experience for a period of five years.

The Graduate Record Examination, the Graduate Management Admissions Test, or the Law School Admissions Test is required of all applicants.

There is no full-time study requirement. It is expected that during the period of required course work students may continue to be fully employed. Many core courses will be scheduled on an intensive weekend basis.

Application forms may be obtained from University Enrollment Services, Graduate Admissions, Virginia Commonwealth University, 821 West Franklin Street, Richmond, VA 23284. Admissions decisions will be made once each year, by May 1. Before an admissions decision is made, personal interviews with the Doctoral Committee will be scheduled for those who meet the basic requirements.

REQUIREMENTS FOR THE DOCTOR OF PUBLIC ADMINISTRATION DEGREE

A minimum of 37 semester credit hours past the master's or professional degree is required. Up to nine semester hours of credit may be granted for appropriate course work

completed in a doctoral program at an institution of higher education which is accredited for doctoral studies. There is no foreign language requirement, but competency in analytical methods must be demonstrated. Methods courses are not included in the 37 semester hour minimum requirement. The core curriculum and other requirements are briefly described below:

1. **Core Curriculum.** The core curriculum listed below must be completed by all students. These courses must be taken in the order listed.

DPA 711 Public Career Analysis and Planning (4 credits)

DPA 712 The Public Professions (3 credits)

DPA 713 Ethics and Public Policy (3 credits)

DPA 714 Government Organization Design (3 credits; requires methods competence)

DPA 715 Advanced Public Policy Systems Analysis (3 credits; requires methods competency)

DPA 716 Theory and Practice in Public Administration (3 credits)

Individuals who have completed a nine-semester hour sequence in the Master of Public Administration program consisting of PAD 623, 625, 627, or similar courses in other programs, can be exempted from the DPA 715 requirement. This exemption does not affect the 37 hour minimum degree requirement.

2. **Methods Competency.** Competency in analytical methods will be demonstrated by the successful completion of a minimum of nine semester hours in graduate methods courses or by a competency examination. Methods courses taken in a master's degree program will count toward this requirement if the courses were graduate level offerings. The precise configuration of courses taken will be decided by the student in consultation with an advisor.
3. **Program Options.** Students may choose between two subject matter tracks in completing formal course work for the D.P.A. degree.
 - a. **The Administrative Management Track.** Those who choose this option will complete at least 18

graduate credit hours of an approved program, including the following two courses:

(1) PAD 670 Advanced Public Financial Management (3 credit hours)

(2) PAD 682 Advanced Public Personnel Management (4 credit hours)

Students who have offered either or both of these courses, or their equivalents, for a master's degree, will substitute two other appropriate advanced courses in general management from the graduate offerings of the School of Community and Public Affairs or another of the schools that offer such advanced courses; or, in consultation with an advisor, will engage in independent studies supporting the Administrative Management Track. All prerequisites for enrolling in these courses must be met. Students who feel qualified by experience or previous study may take competency examinations to fulfill prerequisite course requirements.

- b. **The Program Management Track.** Students who choose the Program Management Track will complete at least 18 graduate credit hours in a program specialty area. This will consist of a *policy analysis* sequence of nine graduate credit hours chosen from appropriate courses in policy analysis, policy research, program implementation, and program evaluation; and a *policy field* sequence of nine graduate credit hours. Courses appropriate for the Program Management Track are available within the School of Community and Public Affairs in the Departments of Administration of Justice and Public Safety, Recreation, Rehabilitation Counseling, and Urban Studies and Planning. Options in other schools are also possible.

4. **Comprehensive Written Examinations.** After the successful completion of all of the courses required in the core curricu-

lum, the establishment of methods competency, and the completion of the required courses in either the Administrative Management Track or the Program Management Track, students may present themselves for written examinations in the core and an option. Those who fail to demonstrate doctoral-level competence on these examinations will be allowed to retake them once.

5. **Preliminary Oral Examination and Admittance to Candidacy.** After passage of the comprehensive written examinations, an oral examination will be scheduled. In addition to demonstrating a doctoral-level degree of understanding of the discipline, students will present dissertation plans. Completion of this phase of the program will admit the student to doctoral candidacy.
6. **Dissertation Preparation.** Under the guidance of faculty first and second readers, and with the assistance of an advisory doctoral committee, the candidate for the D.P.A. degree will prepare an appropriate dissertation. During the period of this preparation the student will continuously enroll in DPA 898 Dissertation Research (3–12 credits).
7. **Dissertation Presentation.** After the approval of the dissertation by the dissertation committee, a dissertation presentation will be scheduled. In addition to the student's academic advisors, well-qualified professionals will be invited to critique the dissertation. Acceptance of the dissertation will lead to the awarding of the Doctor of Public Administration degree.

GRADUATE COURSES IN DOCTOR OF PUBLIC ADMINISTRATION PROGRAM (DPA)

711 Public Career Analysis and Planning. Semester course; 4 lecture hours. 4 credits. An extensive analysis of student's career plans and their relationship to the DPA Program. Included are each student's 1) assessment of personal and career milestones; 2) examination and presentation of life and career goals; 3) evaluation of data from the professional community; and 4) statement of DPA and life-long learning plans (Doctoral students only)

712 The Public Professions. Semester course; 3 lecture hours. 3 credits. A critical review of the development of the public professions with special emphasis upon the

combination of historical, cultural, technological, and intellectual forces that led to the growth of public management and its differentiation from private or corporate systems. (Doctoral students only)

713 Ethics and Public Policy. Semester course; 3 lecture hours. 3 credits. An examination of the role of ethics and ethical reasoning within the American public policy system. Special emphasis is given to the personal and professional ethical structures of the public executive and how these impact upon public policy. Topics include obligations, values, constitutionalism, distributive justice, equity, equality, secrecy, and lying. (Doctoral students only)

714 Government Organization Design. Semester course; 3 lecture hours. 3 credits. An intensive examination of government organizational theory from a macro level, focusing on public sector organizations and their environments, technologies, and structures. Also incorporated in the course are aspects of organizational research which serves as a vehicle for examining and further understanding the above variables. (Methods competency required. Doctoral students only)

715 Advanced Public Policy Design and Evaluation. Semester course; 3 lecture hours. 3 credits. A comprehensive examination of the theory and practice of public policy decision-making, analysis, and evaluation. The course is designed to provide students with an awareness of the public policy environment and knowledge of the range of decision tools available for prospective analysis and program evaluation. (Methods competency required. Doctoral students only)

716 Theory and Practice in Public Administration. Semester course; 3 lecture hours. 3 credits. The application of theory to public policy operational problems. Students will select major theoretical and operational perspectives for critical analysis from an administrative and management standpoint (Doctoral students only)

898 Dissertation Research. Semester course; 3 to 12 hours. May be repeated for credit. Prerequisite: admittance to doctoral candidacy. Research on an approved dissertation subject.

Department of Administration of Justice and Public Safety

FACULTY

- Barrett, C. Allen *Assistant Professor* M.A., John Jay College of Criminal Justice; criminal justice research.
- Deurmier, Armon O. *Assistant Professor* S.S.E., Central Missouri State University; safety and education.
- Farmer, David J. *Associate Professor and Chairman, Department of Administration of Justice and Public Safety* D.P.A., Nova University; criminal justice management and police management.
- Geary, David P. *Associate Professor* Ph.D., Marquette University; criminal justice administration
- Hageman, Mary J. *Assistant Professor* Ph.D., Washington State University; administration, management and juvenile justice.

Hague, James L. *Associate Professor* J.D., L.L.M., University of Virginia School of Law; criminal law and procedure, course and judicial process.

Hooker, James E. *Assistant Professor* M.A., Washington State University; criminal justice management and criminalistics.

Keve, Paul W. *Professor* M.S.W., Richmond Professional Institute; corrections and social work.

Malcan, Jay W. *Assistant Professor* Ph.D., Florida State University; criminology and corrections.

McDonald, R. Michael *Assistant Professor* M.S., Central Missouri State University; safety education.

Morgan, James P. *Associate Professor* M.P.A., City University of New York; management and organizational development.

The graduate program in administration of justice and public safety is designed to provide advanced educational preparation for practitioners and students pursuing careers in the fields of criminal justice or juvenile justice. Such preparation includes understanding appropriate theoretical positions and developing appropriate professional skills.

The Master of Science in administration of justice (MS) is a one-year degree program requiring 36 semester hours of classwork. Four separate options are available, designed to meet specific needs of differing students. These options are

Intervention/Prevention—for the practitioner or student interested in developing treatment or case management skills appropriate for counseling positions, probation or parole positions, or correctional institutions.

Program Management (Administration)—for the practitioner or student interested in developing skills appropriate for middle and upper level management positions in criminal justice.

Research—for the practitioner or student interested in developing research evaluation related skills, or planning to pursue the Ph.D. degree.

Manpower Development—for the practitioner or student interested in training positions in criminal or juvenile justice agencies, and/or community college level education.

Within each option, students take appropriate graduate courses from AJPS faculty and other selected departments in the university. Each option includes sufficient flexibility for students to elect to emphasize areas of the specialized professional interest.

The Department of Administration of Justice offers students the opportunity to complete the equivalent of a minor in several related fields: public administration, rehabilitation counseling, sociology, business, education, and urban planning. A two-course foundation sequence is required for all students who do not hold an undergraduate degree in criminal justice; field placement opportunities will be available for students without field experience.

The program is designed to accommodate both full- and part-time students. Nearly all courses are available in the evenings after 4 pm; weekend courses are also offered for students desiring to commute to Richmond on a work-study basis.

The Master of Science in the administration of justice program was established in 1975 in response to a clear expression of need from the justice field, and as an outgrowth of the undergraduate administration of justice and public safety program.

WORK-STUDY

A work-study program is available for those students able to attend classes only on weekends. The program is presented on a split-intensive basis including weekends during the semester. Several such courses will be offered each year permitting students to take all administration of justice and public safety courses necessary to graduate over a period of four years. Students should register for work-study courses through the evening program in the usual manner.

ADMISSIONS

Beyond the general School of Graduate Studies standards listed in Part I of this bulletin, admissions will be based on

1. An undergraduate grade-point average of at least 2.7.
2. Previous evidence of ability to perform graduate level work (such as graduate level course work with grade of "B" or above).
3. Assessment of prior experience or potential in criminal justice and related areas.
4. In addition, applicants will be evaluated by the Department Admissions Committee in two general areas: evi-

dence of the ability to perform satisfactorily at the graduate level, and evidence of commitment and potential for contribution to the field.

TRANSFER CREDIT

At the time of acceptance of a student into the program, a maximum of six semester hours of appropriate graduate credit may be applied toward a Master of Science degree in the Department of Administration of Justice and Public Safety. Recommendations to accept transfer credit or to deviate from this policy will be made by the departmental admissions committee to the dean of the School of Graduate Studies.

FINANCIAL AID INFORMATION

Information and application forms for the Law Enforcement Education Program (LEEP) may be secured from the Virginia Commonwealth University Financial Aid Office, 327 West Main Street, Richmond, VA 23284.

REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN ADMINISTRATION OF JUSTICE (In addition to general graduation requirements)

1. Students must complete a minimum of 36 graduate semester credits approved by the chairman, with an overall grade point average of 3.0 or above.
2. Students without acceptable experience in administration of justice must complete a supervised field placement under the direction of the department and the immediate supervision of a qualified person in an approved agency or facility.
3. All students must pass a comprehensive examination. It is administered after students have completed a minimum of 30 graduate credits. This examination presently is coordinated in conjunction with a faculty committee review of the student's required research project (692 or Thesis 799).

CORRESPONDENCE AND INFORMATION

Further information and appropriate

forms may be obtained by writing to the Chairman, Department of Administration of Justice and Public Safety, Virginia Commonwealth University, 816 West Franklin Street, Richmond, VA 23284, (804) 257-1050.

Application forms and other material may be obtained from University Enrollment Services, Graduate Admissions, Virginia Commonwealth University, 821 West Franklin Street, Richmond, VA 23284, (804) 257-0334.

PROGRAM OPTIONS

INTERVENTION/PREVENTION OPTION

	<i>Credits</i>
AJP 501 ¹ Behavior and Justice System	
Intervention	3
AJP 502 ¹ Judicial Process and Intervention . . .	3
AJP 511 Research and Evaluation in	
Administration of Justice	3
REH 611 Principles, Methods, and Techniques	
in Rehabilitative Counseling	3
REH 612 Principles, Methods, and Techniques	
in Rehabilitation Counseling (Group	
Methods)	3
AJP 555 Community-Based Corrections	3
AJP 600 Seminar: Innovations in	
Administration of Justice	3
AJP 692 Independent Study	3
Select two	6
AJP 525 International Crime Control and Prevention	
(3 credits)	
AJP 611 Delivery of Services in Administration of	
Justice (3 credits)	
AJP 621 Prevention and Diversion in Administration	
of Justice (3 credits)	
AJP 625 Managing Community Resources	
Toward Diversion	
AJP 655 Planning and Politics of Community-	
Based Corrections (3 credits)	
AJP 661 Case Management in Justice and Public	
Safety (3 credits)	
Recommended Electives	6
	36

Recommended Electives:

AJP 574 Correctional Institution Development and Design
 AJP 660 Public Safety: Legal Systems
 EDU 571 Education of Self
 PSY 507 Abnormal Psychology
 PSY 508 Forensic Psychology
 PSY 509 Personality
 PSY 511 Survey of Psychological Tests
 PSY 623 Counseling and Psychotherapy
 PSY 630 Social Psychology
 REH 521 Overview of Alcoholism

¹For those with appropriate undergraduate preparation, an additional six hours of approved elective credit may be substituted.

REH 607 Community Resources
 REH 625 Measurement and Evaluation in
 Rehabilitation
 REH 655 Seminar in Rehabilitation
 SOC 620 Criminology
 SOC 630 Social Psychology

PROGRAM MANAGEMENT OPTION

Credits

AJP 501 ¹ Behavior and Justice System Intervention	3
AJP 502 ¹ Judicial Process and Intervention . . .	3
AJP 511 Research and Evaluation in Administration of Justice	3
AJP 611 Delivery of Services in Administration of Justice	3
AJP 631 Public Safety: Administrative Trends and Issues	3
AJP 600 Seminar: Innovations in Administration of Justice	3
Select three	9
AJP 525 International Crime Control and Prevention (3 credits)	
AJP 555 Community-Based Corrections	
AJP 574 Correctional Institution Development and Design (3 credits)	
AJP 612 Public Safety: Policy Issues in the Administration of Justice (3 credits)	
AJP 621 Prevention and Diversion in Administration of Justice (3 credits)	
AJP 622 Public Safety: Comparative Systems (3 credits)	
AJP 655 Planning and Politics of Community-Based Corrections (3 credits)	
AJP 660 Public Safety: Legal Systems (3 credits)	
AJP 661 Case Management in Justice and Public Safety (3 credits)	
AJP 692 Independent Study	3
Recommended Electives	<u>6</u>
	36

Recommended Electives:

BUS 509 Governmental Accounting
 BUS 643 Administrative Systems
 BUS 660 Business Information Systems
 EDU 645 Public Relations Principles (2 credits)
 PAD 601 Introduction to Public Administration
 PAD 607 Personnel Administration in Governmental
 Organizations
 PAD 621 Organizational Behavior and Management
 in Government
 PAD 631 Financial Management and Budgeting in
 Government
 PAD 641 Analytic and Evaluative Methods in Public
 Administration
 REH 607 Community Resources
 SOC 610 Complex Organizations
 SOC 615 Seminar in Mass Communications
 SOC 620 Criminology
 USP 511 Urban Public Policy-Making Processes

USP 512 Metropolitan and Regional Public
 Management
 USP 522 Programming and Budgeting
 USP 531 Introduction to Urban and Regional
 Planning
 USP 671 Planning Methods I: Planning Information
 Systems and Research Design
 USP 672 Planning Methods II: Plan Formulation
 Implementation Strategies

RESEARCH AND EVALUATION OPTION

Credits

AJP 501 ¹ Behavior and Justice System Intervention	3
AJP 502 ¹ Judicial Process and Intervention . . .	3
AJP 511 Research and Evaluation in Administration of Justice	3
AJP 512 Advanced Research and Evaluation . .	3
AJP 600 Seminar: Innovations in Administration of Justice	3
SOC 608 ² Advanced Statistical Methods (3 credits)	
Select three	9
AJP 525 International Crime Control and Prevention (3 credits)	
AJP 555 Community-Based Corrections (3 credits)	
AJP 574 Correctional Institution Development and Design (3 credits)	
AJP 611 Delivery of Services in the Administration of Justice (3 credits)	
AJP 621 Prevention and Diversion in Administration of Justice (3 credits)	
AJP 622 Public Safety: Comparative System	
AJP 655 Planning and Politics of Community-Based Corrections (3 credits)	
AJP 660 Public Safety: Legal Systems (3 credits)	
AJP 799 Thesis	6
Recommended Electives	<u>6</u>
	36

Recommended Electives:

CSC 501 Data Structures
 CSC 503 Programming Language
 CSC 504 Compiler Construction
 CSC 505 Computer Organization
 PSY 511 Survey of Psychological Tests
 PSY 627 Statistics in Psychological Research
 PSY 643 Principles of Psychological Measurement
 SOC 600 Advanced Principles of Sociology
 SOC 601 Advanced Methods of Social Research
 SOC 602 Seminar in Sociological Theory
 SOC 620 Seminar in Criminology
 SOC 622 Theory Construction
 BUS 564 Complex Information Systems
 BUS 566 Computer Performance Analysis
 BUS 632 Statistical Analysis
 BUS 645 Operations Research
 BUS 661 Information Systems Development
 PAD 623 Analytical and Evaluations Methods in
 Public Administration
 PAD 627 Policy Analysis Research
 URP 671 Planning Methods I: Planning Information
 System and Research Design

¹For those with appropriate undergraduate preparation, an additional six hours of approved elective credit may be substituted.

²An applied social science statistics course may be substituted for SOC 608.

MANPOWER DEVELOPMENT (EDUCATION AND STAFF TRAINING) OPTION

	<i>Credits</i>
AJP 501 ¹ Behavior and Justice System Intervention	3
AJP 502 ¹ Judicial Process and Intervention	3
AJP 511 Research and Evaluation in Administration	3
AJP 621 Prevention and Diversion in Administration of Justice	3
AJP 600 Seminar: Innovations in Administration of Justice	3
Select three	9
AJP 525 International Crime Control and Prevention (3 credits)	
AJP 555 Community-Based Corrections (3 credits)	
AJP 574 Correctional Institution Development and Design (3 credits)	
AJP 611 Delivery of Services in Administration of Justice (3 credits)	
AJP 612 Public Safety: Policy Issues in the Administration of Justice (3 credits)	
AJP 622 Public Safety: Comparative Systems (3 credits)	
AJP 625 Managing Community Resources Toward Diversion (3 credits)	
AJP 631 Public Safety: Administrative Trends and Issues (3 credits)	
AJP 655 Planning and Politics of Community-Based Corrections (3 credits)	
AJP 660 Public Safety: Legal Systems (3 credits)	
AJP 661 Case Management in Justice and Public Safety (3 credits)	
AJP 692 Independent Study	3
Select one:	3
EDU 687 The Adult Learner (3 credits)	
EDU 688 Instructional Strategies for Adults (3 credits)	
EDU 698 Adult Education Seminar (3 credits)	
Recommended Electives	6
	36

Recommended Electives:

EDU 648 Preparation of Instructional Materials
 EDU 649 Utilization of Educational Media and Materials
 EDU 686 The Adult Education Movement
 EDU 694 The Community College, Its History and Development
 EDU 696 Adult Program Management and Evaluation
 SOC 620 Criminology

GRADUATE COURSES IN ADMINISTRATION OF JUSTICE (AJP)

501 Behavior and Justice System Intervention. Semester course; 3 lecture hours. 3 credits. A survey of factors associated with human behavior is related to crime prevention and justice system intervention. Emphasis is

placed on the sociopath, aggressive offender, sub-cultural client of the justice system, and the youthful delinquent. (Graduates of appropriate undergraduate curricula may obtain permission to substitute this course.)

502 Judicial Process and Intervention. Semester course; 3 lecture hours. 3 credits. A survey of the theoretical and historical foundations of juvenile and criminal law, American judicial system, and system intervention. Includes review of juvenile and criminal courts, issues related to placement and sentencing practices, and relationship of the legal process to prevention and intervention. (Graduates of appropriate undergraduate curricula may obtain permission to substitute this course.)

511 Research and Evaluation in Administration of Justice. Semester course; 3 lecture hours. 3 credits. Examination of juvenile and criminal justice research and evaluation, emphasizing principles of design, methodology, analysis, and interpretation of data. Ascertains the reliability, validity, and applicability of justice system research.

512 Advanced Research and Evaluation. Semester course; 3 lecture hours. 3 credits. Exploration of more sophisticated justice system research techniques and methodologies. Students design methods of applying research and evaluation principles to actual operational problems in the justice and safety systems.

525 International Crime Control and Prevention. Semester course; 3 lecture hours. 3 credits. An analytical study of the United Nations, Interpol, the World Court, and other crime control and prevention agencies operating on the international scene and an examination of new, emerging types of crimes throughout the world. Exploration of etiological factors related to international criminality. Review of planning and world models for crime reduction/prevention.

555 Community-Based Correctional Programs. Semester course; 3 lecture hours. 3 credits. A comprehensive overview of community correctional programs is offered. Probation and parole are covered in detail.

574 Correctional Institution Development and Design. Semester course; 3 lecture hours. 3 credits. Examines the various concepts, theories, and techniques involved in development of modern correctional treatment processes as they influence design of correctional institutions, including community-based facilities. Students analyze current designs and architectural innovations in corrections, with major consideration directed toward the national standards for correctional architecture.

600 Seminar: Innovations in Administration of Justice. Semester course; 3 lecture hours. 3 credits. Seminar in administration of justice topics, including new intervention and prevention techniques, victimization and data analysis, impact of juvenile and correctional law and court decisions, and other current pertinent issues. (One semester required for all graduate students; may be repeated once as an elective).

611 Delivery of Service in Administration of Justice. Semester course; 3 lecture hours. 3 credits. Analyzes contemporary and innovative practices in delivery of

¹For those with appropriate undergraduate preparation, an additional six hours of approved elective credit may be substituted.

public safety services with emphasis on administrative, organizational, and management principles. Includes discussion emphasis on managing change and long-range planning within juvenile justice, criminal justice, and public safety agencies or programs.

612 Public Safety: Policy Issues in the Administration of Justice. Semester course; 3 lecture hours. 3 credits. Examines critical public policy issues relating to the administration of justice in terms of society's interests. Emphasizes policy and planning implications of interagency relationships, the impact of social change in the criminal justice process, and community involvement in the control and prevention of crime in an urbanized society. Special attention is directed to the distribution of crime and disturbance, the development of public safety indicators, and the alternative for governmental response.

621 Prevention and Diversion in Administration of Justice. Semester course; 3 lecture hours. 3 credits. Evaluates recent developments in preventive techniques and strategies related to juvenile delinquency and youthful or adult offenders. Considerable attention devoted to theories and practices associated with diversion of juveniles and adults from the formal justice system, and to workable models for crime and delinquency prevention programs.

622 Public Safety: Comparative Systems. Semester course; 3 lecture hours. 3 credits. Study of contemporary national and international criminal justice and public safety systems, emphasizing their comparative aspects. Critique of major hypotheses; review of recent developments and contributions of operational agencies and academic institutions through projects and research.

625 Managing Community Resources Toward Diversion. Semester course; 3 lecture hours. 3 credits. Views diversions from the juvenile justice system as an unstructured series of subsystems involving various community resources including education, employment, recreation, religion, mental health, and civic groups. The planning and management of these resources toward the common goal of crime and delinquency prevention will be studied, as well as the implication for the resources. Principles and skills developed will be applicable to diversion of adults from the criminal justice system.

631 Public Safety: Administrative Trends and Issues. Semester course; 3 lecture hours. 3 credits. Examines administrative behavior and organizational theory in criminal justice and public safety agencies. Analyzes substantive administrative concepts, program planning and development, and innovative management practices.

655 Public Safety: Planning and Politics of Community-Based Corrections. Semester course; 3 lecture hours. 3 credits. Examines the process of planning community-based correctional programs. Administrative problems related to budgeting, staffing, and managerial policy-making are considered. Political considerations in introducing innovative correctional programs which involve the community and criminal justice agencies are reviewed as part of the planning process.

660 Public Safety: Legal Systems. Semester course; 3 lecture hours. 3 credits. Comparative study of the formal and informal procedures of various criminal justice systems. Examines the major constraints and authorizations of the legal and judicial systems on arrest, prosecution, trial, sentencing, appeal, and the general operations of the criminal justice system.

661 Case Management in Justice and Public Safety. Semester course; 3 lecture hours. 3 credits. Discussion of concepts, processes, and implications related to determination and implementation of management philosophies and strategies for achieving productivity and accountability within justice and safety agencies. Individual priority needs of the citizen/client are assessed and compared with concern for public safety, costs, and other administrative factors.

692 Independent Study in Administration of Justice. Semester course; 3 credits. Prerequisite: permission of department chairman. Readings, individual research, or field placement in juvenile or criminal justice agencies. Completion of this course requires a research project on an issue pertinent to the student's graduate program needs and career interests.

711 Public Career Analysis and Planning. Semester course; 4 lecture hours. 4 credits. An extensive analysis of student's career plans and their relationship to the DPA program. Included are each student's (1) assessment of DPA and life long learning plans. (Doctoral and presentation of life and career goals); (3) evaluation of data from the professional community, and (4) statement of DPA and life-long learning plans. (Doctoral students only)

712 The Public Professions. Semester course; 3 lecture hours. 3 credits. A critical review of the development of the public professions with special emphasis upon the combination of historical, cultural, technological, and intellectual forces that led to the growth of public management and its differentiation from private or corporate systems. (Doctoral students only)

713 Ethics and Public Policy. Semester course; 3 lecture hours. 3 credits. An examination of the role of ethics and ethical reasoning within the American public policy system. Special emphasis is given to the personal and professional ethical structures of the public executives and how these impact upon public policy. Topics include obligation, values, constitutionalism, distributive justice, equity, equality, secrecy, and lying. (Doctoral students only)

714 Government Organization Design. Semester course; 3 lecture hours. 3 credits. An intensive examination of government organizational theory from a macro level focusing on public sector organizations and their environments, technologies, and structures. Also incorporated are aspects of organizational research which serves as a vehicle for examining and further understanding the above variables. Methods competency required. (Doctoral students only)

715 Advanced Public Policy Design and Evaluation. Semester course; 3 lecture hours. 3 credits. A comprehensive examination of the theory and practice of public policy decision making, analysis, and evaluation. The course is designed to provide students with an

awareness of the public policy environment and knowledge of the range of decision tools available for prospective analysis and program evaluation. (Methods competency required. Doctoral students only)

716 Theory and Practice in Public Administration. Semester course; 3 lecture hours. 3 credits. The application of theory to public policy operational problems. Students will select major theoretical and operational perspectives for critical analysis from an administrative and management standpoint. (Doctoral students only)

763 Seminar in Social Justice. Semester course; 3 lecture hours. 3 credits. Exploration of basic concepts related to social justice, and review of the major contemporary problems related to social injustice in criminal justice and the world. Study of the basic principles and systems approaches in development of social justice models for the future. (Doctoral students only)

773 Criminal Justice Systems Seminar. Semester course; 3 lecture hours. 3 credits. Systematic examination of criminal justice policy-making, management and operations in the context of past experience, and future needs. Among the items explored will be the context of criminal justice policy-making and management; criminal justice management reform in historical perspective; critical policy issues and cross-cutting management issues; and emerging needs in the area. Attention will be paid to system-wide issues, to the component subsystem, and to the relationships between the criminal justice and other systems. (Limited to doctoral students)

799 Thesis. 3 or 6 credits. Prerequisites: permission of instructor and appropriate research courses.

898 Dissertation Research. Semester course; 3 to 12 hours. May be repeated for credit. Prerequisite: admission to doctoral candidacy. Research on an approved dissertation subject.

Department of Public Administration

FACULTY

Alimard, Amin *Assistant Professor* D.P.A., University of Southern California; personnel management, comparative administration.

Armstrong, Crichton J. *Assistant Professor* M.Sc., London School of Economics and Political Science; public finance, policy analysis.

Fairholm, Gilbert W. *Associate Professor* D.P.A., State University of New York; organizational behavior, executive leadership.

Grosenick, Leigh E. *Professor* Ph.D., University of Minnesota; administrative ethics, public finance.

Hambrick, Ralph S. *Associate Professor* Ph.D., Syracuse University; public management, policy analysis.

Henry, Laurin L. *Professor and Dean* Ph.D., University of Chicago; the American presidency, bureaucracy.

Oliver, Robert B. *Assistant Professor* Ph.D., University of Virginia; organizational theory, research, evaluation.

Pak, Chong M. *Professor and Chairman* D.P.A., University of Southern California; administrative and organizational theory, organizational behavior.

Wergin, John F. *Associate Professor* Ph.D., University of Nebraska; research, evaluation.

The emphasis of the graduate degree in public administration is to professionally educate individuals in the responsibilities of public sector administration.

The program is generalist in nature; thus, 22 of the 45 credit hours are devoted to a core curriculum of required courses. Students may use a minimum of nine hours to pursue an area of concentration; however, a concentration is not required, and these hours may be used to pursue additional elective courses. A three-credit practicum is required for those students without significant professional experience in a public agency.

CORE CURRICULUM

In the generalist portion of the program, four broad areas of course work are offered in order to strike a balance between theory and application. These are:

- I. The political, social, and economic context of public administration.
- II. Public organization management processes, and behavior.
- III. Quantitative and non-quantitative analytic tools.
- IV. Policy analysis.

ADMISSIONS

In addition to the general requirements, selection is made on the basis of undergraduate academic performance, intellectual capacity, accomplishments, experience, and other indicators of the ability to pursue graduate studies profitably.

Interview

A personal interview with the public administration faculty is required. If this poses a hardship, the chairman will designate an alternate method for the pre-acceptance interview.

Full Acceptance

Students accepted in full standing must

have a minimum of 3.0 grade point average on a 4.0 scale in their last 60 (semester) hours of undergraduate work and a total score of at least 1,000 on the Graduate Record Examinations (GRE), or 500 on the Graduate Management Admissions Test, or 500 on the Law School Admissions Test.

Individuals with Advanced Degrees

Persons holding advanced degrees from fully accredited institutions of higher education may be given full admittance without reservations upon presentation of evidence of the award of an advanced degree. Although this does not eliminate any step in the admissions procedure outlined previously, it does relieve the applicant of the necessity of submitting GRE results.

TRANSFER CREDIT

A maximum of six semester hours of acceptable graduate credit earned in a degree program at an accredited institution but not applied towards an awarded degree may be transferred and applied toward the M.P.A. degree. Such credits will be evaluated for acceptance purposes at the completion of nine semester hours of work in VCU's graduate program in public administration.

FINANCIAL AID INFORMATION

Small amounts of financial aid are available through awards made by the university through the School of Community and Public Affairs. Notice of the availability of these funds will be mailed to students and applicants when such awards are made.

REQUIREMENTS FOR THE DEGREE OF MASTER OF PUBLIC ADMINISTRATION

1. A student must complete a minimum of 45 semester hours, as approved by the faculty advisor with an overall grade-point average of 3.0 or above.
2. **Practicum.** Each student who does not have at least one year of professional-level experience in the public sector or in a non-profit agency will be required to earn three hours of credit in a public service practicum. The practicum will

usually be taken during the summer between the first and second years or during the last semester of course work. However, the scheduling of the practicum will be flexible enough to accommodate the needs of those students who pursue the degree on a part-time basis.

All practicums will be negotiated between the university and the host agency in terms of the scope of work to be performed by the student; the type and extent of supervision both within the agency and from the university; and, the stipend, if any, to be attached to the practicum. Based on such negotiations, a learning contract will be executed among the university, the agency, and the student.

CONTINUOUS ENROLLMENT REQUIREMENTS

Students who fail to register for two consecutive semesters (summer sessions excluded) will automatically be dropped from the program and must reapply for admission in order to continue. Students who drop all courses during a regular term will not be counted as having registered for that term. Any exceptions to this policy will be made on an individual basis and by petition, whenever the department is notified in writing either prior to the beginning of a term or when a continuous absence is occasioned by hardship conditions. Students who reapply after having been dropped for failure to register continuously will be admitted, if at all, under the bulletin requirements in effect at the time of readmittance. This means that some or all of the courses completed prior to the reapplication may not be accepted toward completion of the degree.

CORRESPONDENCE AND FURTHER INFORMATION

Further information and appropriate forms may be obtained by writing to University Enrollment Services, Graduate Admissions, Virginia Commonwealth University, 821 West Franklin Street, Richmond, VA 23284, (804) 257-0334.

CORE CURRICULUM (REQUIRED COURSES)

First Phase

PAD 601 Principles of Public Administration ..	3
PAD 607 Personnel Administrations in Governmental Organizations	3
PAD 609 Financial Management in Government	3
PAD 621 Organizational Behavior and Management in Government	3
PAD 623 Analytical and Evaluation Methods in Public Administration	4
PAD 625 Policy Formulation and Implementation	3
PAD 689 Seminar in Public Administration: Integration of Theory and Practice	3
	22
Electives or Concentration	23
	45

Students may be required to take PAD 693 Public Administration Practicum for three credit hours. (See Requirements for the Degree above.)

Students are also required to present evidence of knowledge of inferential statistics through the level of multiple regression prior to enrolling in PAD 623 Analytical and Evaluation Methods in Public Administration.

Elective courses may be chosen from other public administration offerings or courses in other departments at VCU, with the consent of the student's advisor.

CONCENTRATION OPTION

The elective portion of the curriculum is designed to accommodate the professional development needs of the individual student. To achieve this the student may elect to take a variety of courses to improve a range of administrative skills and understandings; or a concentration track can be chosen to develop graduate professional skills and understandings in one of five major areas of governmental responsibility. These are

- Public Personnel Management
- Public Financial Management
- Executive Management
- Human Resource Program Management
- Evaluation and Public Policy Analysis

Additional concentrations can be developed in other fields to suit individual student needs. This requires agreement be-

tween the Department of Public Administration and other departments at VCU such as Administration of Justice and Public Safety, Economics, Gerontology, Social Work, and Urban Studies and Planning.

Public Personnel Management

A concentration curriculum designed to give students the knowledge, skills, and abilities to operate and manage public agency functions professionally and contribute to the production of new knowledge and management practice in the public management field.

Recommended Courses	Credits
PAD 637 Organic Public Personnel Management	3
BUS 646 Personnel Law	3
PAD 682 Advanced Public Personnel Management	4
	10

Public Financial Management

This concentration is directed toward professional and theoretical competence in the various component fields of public financial operations. Technical, supervisory, and general financial management competencies are emphasized.

Recommended Courses	Credits
PAD 622 Public Sector Budgeting	3
PAD 670 Advanced Financial Management	3
ECO 616 Advanced Public Finance	3
	9

Executive Management

This concentration is especially tailored to the needs of the public executive to assist in the development of productive leadership styles, decision making abilities, and careful consideration of ethical issues in service delivery and management.

Recommended Courses	Credits
PAD 680 Executive Leadership	3
PAD 681 Governmental Decision Making	3
PAD 690 Administrative Ethics	3
	9

Human Resource Program Management

This concentration is oriented to the public manager or policy analyst preparing for a career in the management of governmental programs which focus on the delivery of human services. Programs having a primary or secondary function related to training and employment are emphasized.

Recommended Courses	Credits
PAD 643 Public Employment Policy Analysis . . .	3
PAD 644 Human Resource Program Management	3
	6

Evaluation and Public Policy Analysis

This concentration provides students with the necessary methodological and program background to analyze governmental policy, recommend new approaches and applications, and generally perform at a high level as a program analyst and evaluator. Policy options are available in four policy areas. Students must have the permission of the cooperating departments for policy area concentrations.

Recommended Courses	Credits
PAD 650 Workshop in Evaluation	3
PAD 627 Policy Analysis Research	3
PAD 629 Workshop in Policy	3
	9

CERTIFICATE PROGRAM IN PUBLIC MANAGEMENT (CPM)

The Certificate in Public Management (CPM) is a program to enable practitioners to acquire additional knowledge and skills in public administration without pursuing a regular master's degree course of study. The certificate program is designed to attract students who are interested in taking a limited number of courses, or have a desire to be exposed to new ideas and concepts in the field.

The CPM program requires managers to complete a total of 18 credit hours in a sequence of management development and public service-oriented courses. These courses are at the graduate level and are exactly the same as those offered to fully-matriculated MPA students. The student in the CPM program is required to take a specific set of core courses along with a choice of several specialties made up of electives. A total of 18 credit hours are required: 12 in the core and six in a specialization.

GRADUATE COURSES IN PUBLIC ADMINISTRATION (PAD)

583 Effective Managerial Communications. Semester course; 1 lecture hour. 1 credit. Describes and explains the communication process as it applies in public organizations. Acquaints students with the theoretical basis of interpersonal communications and with applied methodologies from a managerial perspective.

584 Planned Organizational Change. Semester course; 1 lecture hour. 1 credit. Describes and explains strategies and tactics of planned organizational change. Emphasis is placed on the change process in organized situations and on various strategies and tactics the manager may employ to achieve desired change in his/her organization.

585 Power, Influence, and Organizational Competence. Semester course; 1 lecture hour. 1 credit. This course will explore the strategies and tactics of power and influence use in large-scale public organizations. A framework for use of influence strategies will be presented and tactical methodologies will be examined through case study and simulation.

601 Principles of Public Administration. Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of the department. Dynamics of governmental administration including administrative principles, decision making, communication, leadership, organizational models, and the political milieu of administration.

606 Government Management Models. Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of the department. An examination of current thought and research on management theory and organizational design in government. Theory and research from diverse courses, i.e., political science, sociology, industrial psychology, and administrative science will be explored to provide each student with the macro conceptual framework necessary for development or refinement of effective public management skills.

607 Personnel Administration in Governmental Organizations. Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of the department. The general concepts, principles, and techniques of personnel administration and employee relations as applied in governmental units and agencies.

609 Financial Management in Government. Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of the department. The general concepts, principles, and techniques of financial management as they are applied in governmental units and agencies.

610 The Municipal Property Tax. 1 lecture hour. 1 credit. Prerequisite: PAD 609 or permission of the department. An in-depth study of the property tax. The property tax system as administered in Virginia is analyzed. New approaches to ameliorate problems with this tax are proposed.

611 Revenue and Expenditure Forecasting. 1 lecture hour. 1 credit. Prerequisite: PAD 609 or permission of the department. Analysis of the methods and techniques of revenue and expenditure forecasting and of their use in budgeting planning and capital programming. Relationships between forecasting, capital improvement, budgeting and overall government budgeting, planning, and managing systems are developed and elaborated.

612 Government Purchasing. 1 lecture hour. 1 credit. Prerequisite: PAD 609 or permission of the department. Provides the purchasing agent or the student of finance with working tools to improve public purchasing practices in state and local government agencies in-

cluding organizing for purchasing processes and practices in government and special problems and emerging concerns in purchasing management.

613 Risk Management for State and Local Government Officials. 1 lecture hour. 1 credit. Prerequisite: PAD 609 or permission of the department. Normal and extraordinary hazards associated with public organizational management are defined. Identification of measurement devices of "risk of loss" and methods of dealing with loss—prevention, minimization, and remediation—will be covered.

614 Finance and Accounting for the Nonfinancial Executive. 1 lecture hour. 1 credit. Provides orientation to the proper financial tools, ratios, and relationships in accounting for the financial status of the public enterprise. The emphasis is on how to analyze and interpret financial documents.

615 Debt Management for Local Government. 1 lecture hour. 1 credit. Prerequisite: PAD 609 or permission of instructor. Analyze the complex processes involved in managing temporarily idle public funds. Basic and advanced procedures of financial control and planning processes are explained and the use of relevant financial tools used in this field of public finance are taught.

616 Capital Budgeting. 1 lecture hour. 1 credit. Prerequisite: PAD 609 or permission of the department. Teaches the tools of capital budget preparation including cost estimation, discounting, debt management, and cost benefit analysis in the capital programming process.

617 Financial Administration in Virginia State Government. 1 lecture hour. 1 credit. Describes and explains the specifics of the Virginia state system of financial administration. Students will be acquainted with both the theoretical and legal bases of financial administration in Virginia. Emphasis will also be on understanding of responsibility of the various organizations in financial administration and the processes each carries out.

618 Federal Indirect Costs Administration. 1 lecture hour. 1 credit. Prerequisite: PAD 609 or permission of the department. Describes and explains the concept of indirect costs as used in federal grants financing. Federal and state regulations are explained and procedures for recording, analyzing, reporting, and claiming reimbursement will be presented.

619 Management Auditing in Government. 1 lecture hour. 1 credit. The methods and approaches used in evaluating the adequacy and appropriateness of management controls and the ways in which they are applied in the public agency are examined from operational, management, and performance measurement perspectives.

621 Organizational Behavior and Management in Government. Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of the department. The general concepts, principles, and theories of management and organizational behavior as they relate to the administration of governmental units and agencies are dealt with in lecture, discussion, and workshop formats.

622 Public Sector Budgeting. Semester course; 3 lecture hours. 3 credits. Prerequisite: PAD 609. Advanced theory and practice of public agency budgeting. In-depth examination of the role of budgeting in the decision-making process and its impact on policy making. Topics include alternative budgeting systems, capital planning and budgeting, budget execution, budgeting analysis techniques, and revenue and expenditure forecasting.

623 Analytical and Evaluation Methods in Public Administration. Semester course; 4 lecture hours. 4 credits. Prerequisites: inferential statistics through multiple regression and permission of department. A survey of the methods employed in the analysis and evaluation of government programs. The course prepares students to read and critique research literature in public administration, to understand the principles of survey and research design, and to apply computer technology to the analysis of research data. The focus of the course is on skill development from the public manager's point of view. Attention is given to individual student program interests.

625 Policy Formulation and Implementation. Semester course; 3 lecture hours. 3 credits. Prerequisite: PAD 623. The examination of various methods for identifying and structuring public policy problems and issues, formulating and analyzing alternative responses, recommending policy actions for decision-making, and designing and evaluating implementation plans and the means to monitor and evaluate the resulting policy outcomes.

627 Workshop in Evaluation Research. Semester course; 3 lecture hours. 3 credits. Prerequisites: PAD 623 and 625. An in-depth analysis of political and methodological issues surrounding evaluation of public programs. The course is project-oriented, emphasizing practical experience in the design and implementation of evaluation procedures, and the impact of evaluation on public policy.

629 Workshop in Policy Analysis. Semester course; 3 lecture hours. 3 credits. Prerequisite: PAD 623 and PAD 625. The application of research methodologies for designing and carrying out analysis of the determinants, characteristics, and implications of public policies and programs including the relationships between the intent of policies and programs and the substantive consequences and outcomes they produce. It includes the identification of policy issues, the creative search for alternative solutions, establishing criteria for decision making, recommending optimal courses for action, and designing strategies for implementing and evaluating policy decisions.

631 Seminar on Public Employee Selection. Semester course; 2 lecture hours. 2 credits. An examination of legislation, sub-legislation, and judicial decisions which define management responsibilities for assuring fair and effective public employee selection will be presented in this course. Course topics include: Federal Uniform Selection Guidelines; the role of knowledge, skills, and abilities in selection; alternative selection processes; and implementing selection processes.

632 Public Employee Performance Evaluation. Semes-

ter course; 2 lecture hours. 2 credits. An examination of theories, approaches, and legal constraints associated with the evaluation of public employee performance. In-depth treatment is given to approaches which meet Federal Uniform Selection Guidelines standards. Systems based on job-related task analysis, on MBO, and on psychological testing are reviewed. Assessment center approaches are given major treatment.

636 Personal Liability of Public Employees. Semester course; 2 lecture hours. 2 credits. An examination of the special legal liabilities and immunities of public employees. Constitutional and tort law are analyzed for personnel liability which affects all public employees with decision-making responsibilities.

637 Organic Personnel Management. Semester course; 3 lecture hours. 3 credits. Prerequisite: PAD 607 or equivalent. An examination of current thought, research, and personnel management theory and practice in government which is person-oriented is presented in this course. Topics include rank-in-the-person personnel systems; career development, executive personnel systems; forecasting human resource needs; individual-based performance evaluation; employee assistance programs; and special emphasis programs.

642 Grants Management. Semester course; 3 lecture hours. 3 credits. Principles and practices of managing federal and state funds and implementing a grant funded program. Topics include federal grant-making process, applying for a grant, developing grant accounting systems, joint funding, disputes, appeals and remedies, and close-out procedures.

643 Public Employment Policy Analysis. Semester course; 3 lecture hours. 3 credits. History, scope, and setting of employment programs in the U.S. Examines the systemic and individual factors which affect employment and unemployment. Topics include history of human resource development and manpower policy, the nature of work, the nature of unemployment, governmental employment programming, and public policy issues.

644 Human Resource Program Management. Semester course; 3 lecture hours. 3 credits. Advanced analysis of theory and research related to internal and external factors which influence the management and delivery of service in human resource organizations. Topics include functions of human resource managers, factors influencing service delivery interorganizational coordination, and management of change in human resource organizations.

652 Planning, Administration, and the Legal Process. Semester course; 3 lecture hours. 3 credits. Prerequisites: PAD 601 and permission of the department. Major emphases are on administrative law, legislation, and substantive environmental law. Judicial review of administration actions: notice, hearing, investigative requirements; the planner and administrator as expert witnesses; legislative language; drafting of legislation; legislative process; NEPA; air; water; and waterlands; solid waste; herbicides and pesticides; noise; and critical man-made areas are investigated.

660 Community Power Dynamics. Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of the

department. Examination of the location of power in the American community; operational concepts and general methodological approaches defined; empirical findings based on various methodological approaches; conclusions on community political systems and power.

662 Advanced Topics in Revenue and Taxation. Semester course; 3 lecture hours. 3 credits. Prerequisites: ECO 616 or permission of instructor. An advanced examination of governmental revenue and taxation policies, tax incidence, and alternative funding techniques.

664 Local Government Administration. Semester course; 3 lecture hours. 3 credits. Prerequisites: PAD 607 and 609 or permission of the department. An intensive examination of the major functional responsibilities with a special emphasis on the organization, standards, operational imperatives, inter-relationship with other functions, and special management problems at the local level, including small and rural jurisdictions.

670 Advanced Public Financial Management. 3 lecture hours. 3 credits. Prerequisites: PAD 609, ECO 616, or permission of the department. Brings together specialty aspects of public financial management such as economic and political implications, practical skill-building, operational financial administration issues and tactics, and accounting principles and approaches, and integrates these disparate segments of public finance. The emphasis is on policy-level implications and strategies of public financial management strategies of executive planning, analysis, and management of the financial sector of public organizations.

680 Executive Leadership Seminar. Semester course; 3 lecture hours. 3 credits. Explores aspects of current interest in leadership style, skills, and roles. This course allows participants to explore areas of personal interest in contemporary public management leadership theory and practice and to share findings in a seminar format.

681 Governmental Administrative Decision-Making Processes. Semester course; 3 lecture hours. 3 credits. Identification of alternative decision-making processes in public sector management environments. Choosing the proper method for the appropriate management level theory and method for controlling administrative decisions within governmental organizations. Dealing with political, budgetary, and personal constraints in achieving organizational goals.

682 Advanced Public Personnel Management. Semester course; 4 lecture hours. 4 credits. Prerequisite: PAD 607 or equivalent. Public personnel management is analyzed in process and systems' perspectives, with specific emphasis on the interrelatedness of discrete system components with other systems. Attention is given to the integration of personnel elements through the development of feedback systems, positive and negative impacts' analyses, and personnel policy development and implementation.

683/Public Administration 683 Administrative Ethics. Semester course; 2, 3 lecture hours. 2, 3 credits. No prerequisite. A philosophical investigation into the problems of making ethical decisions, focusing on issues likely to confront the public administrator. Examples of such issues are: equity in social services delivery, af-

firmative action, loyalty to the bureaucracy vs. "whistle blowing," and conflicts of interest between personal and public interest.

689 Seminar in Public Administration: Integration of Theory and Practice. Semester course; 3 lecture hours. 3 credits. Integrating and applying in professional practice the relevant and appropriate concepts from the discipline of public administration; goal setting for professional growth and approaches to life-long, continuing self-development; updating of knowledge, skills, behaviors, and values in selected, significant areas of public administration as identified by students. This is a capstone course for all MPA students.

691 Topics in Public Administration. Semester course; 1, 2, or 3 lecture hours. Variable credit. Prerequisite: permission of instructor. Course may be repeated with different topics for a maximum of 9 credits. An in-depth study of a selected topic in public administration. See Schedule of Classes for specific topic to be offered each semester.

693 Public Administration Practicum. 3 credits. A professional experience in public service for those students without significant professional-level experience in a public agency.

697 Directed Research in Public Administration. Semester course; 1 to 6 credits. Prerequisite: permission of instructor. Independent research into public administration problems, issues, applications, and theories related to student's field of concentration.

Department of Recreation

FACULTY

Brown, Patricia J. *Instructor* M.S., University of Indiana; leadership and program development.

Hartsoc, Charles E. *Professor and Chairman* Ph.D., University of Illinois; history, philosophy, administration.

Langston, Donnel *Assistant Professor* M.S., University of Illinois; therapeutic recreation and leisure counseling.

Ready, Keith F. *Assistant Professor* Ph.D., Michigan State University; leisure behavior, park planning and management.

Reynolds, Ronald P. *Associate Professor* Ph.D., University of Illinois; therapeutic recreation and social/psychological determinants of leisure.

Wise, Michael S. *Associate Professor* Ph.D., University of Georgia; management of leisure delivery systems and administration.

The purpose of the graduate program in recreation is to prepare administrators, supervisors, and other recreation and park personnel for specialized or advanced responsibilities in public, quasi-public, and/or private agencies engaged in providing recreational and leisure services and programs. The curriculum provides for experiential learning through the analysis of organizations' and communities' leisure ser-

vice delivery systems and seeks to improve the quality of life for the individual in today's complex society.

The master's degree in recreation requires a minimum of 36 semester hours of graduate study, including a thesis or research project. The courses are grouped as follows:

A. A core of departmental courses required of all students in the program.

This component of the program includes 15 semester hours of required courses designed to equip students with an advanced knowledge of the historical, philosophical, and scientific basis of the recreation and parks field. The seminar in recreation addresses contemporary issues in each of the three areas of concentration within the program and provides an opportunity for independent study. Research and scholarly writing requirements provide additional experience in analysis and problem solving, plus the generation of new knowledge related to the provision of leisure services in today's urban environment. Required courses within the core curriculum are as follows:

REC 601 Conceptual Foundations of Recreation and Leisure Services (3 semester hours)

REC 603 Research and Evaluation—Processes in Recreation (3 semester hours)

REC 604 Research Practicum (3 semester hours)

REC 690 Seminar in Recreation (3 semester hours)

One of the following:

REC 797 Project Research in Recreation (3 semester hours)

REC 798 Thesis (3 semester hours)

Elective approved by advisor

B. Sets of required foundation courses for each of three optional areas of concentration: leisure service management, recreation and tourism planning, and therapeutic recreation.

In addition to the basic core, students will develop specialized knowledge and professional competence in one of three areas of concentration. A description of each area and its six semester hour *foundation module* is as follows:

Leisure Service Management. This area is designed for students who wish to expand their professional preparation for general administration and leadership in public or private leisure service organizations. Required courses include:

REC 602 Organization and Administration of Recreation Systems (3 semester hours)

REC 609 Program Development and Management (3 semester hours)

Therapeutic Recreation. This area of specialization is for students who wish to undertake advanced study in preparation for careers in leadership and supervision of recreation programs for disabled persons in residential or community settings. An emphasis is placed on the factors influencing the provision of leisure services for disabled persons in modern society. Required courses include:

REC 605 Program Development in Leisure Services for Disabled Persons (3 semester hours)**REC 606 Current Issues in Leisure Services for Disabled Persons (3 semester hours)**

Recreation and Tourism Planning. The emphasis of this option is toward developing competencies in the analyzing, planning, and marketing of recreation, park, and tourism facilities. The implications and study of total environmental impacts both positive and adverse, are of growing concern to community planners and the travel industry. Therefore, opportunities for theoretical and applied research into the interrelationships of community leisure services planning with community economic development, using tourism as a major tool, abound. Required courses include:

REC 608 Analysis and Planning for Recreation and Tourism (3 semester hours)**URP 671 Planning Methods I: Planning Information Systems and Research Design (4 semester hours)**

C. Supportive courses chosen according to the area of concentration.

Each of the three previously described areas of concentration is designed to incorporate multidisciplinary preparation utilizing the supportive resources of the School of Community and Public Affairs as well as other units of the university. Fifteen hours of course work in related disciplines will be selected with the consent of the student's academic advisor.

ADMISSION REQUIREMENTS

Admission requirements for the Master of Science degree in recreation include a cumulative grade point average of 2.5 (C+) or better in the applicant's undergraduate work and a 3.0 (B) in the last two full years of undergraduate study; acceptable scores on the verbal, quantitative, and analytical tests of the Graduate Record Examination; and

evidence of adequate undergraduate preparation in recreation or a closely related area. In the absence of such academic background and/or experience, the applicant may be required to enroll in appropriate undergraduate and graduate level courses in addition to the requirements specified above. Applicants will be evaluated individually by the departmental graduate faculty committee. Minimum admission requirements as outlined above constitute the basis for the evaluation.

CORRESPONDENCE AND FURTHER INFORMATION

For additional information and applications please contact University Enrollment Services, Graduate Admissions, Virginia Commonwealth University, 821 West Franklin Street, Richmond, VA 23284 (804) 257-0334

GRADUATE COURSES IN RECREATION (REC)

601 Conceptual Foundations of Recreation and Leisure Services. Semester course; 3 lecture hours. 3 credits. A study of the development of the recreation and leisure services movement in the United States. Attention will be given to the historical, philosophical, and social bases of recreation and leisure services in today's society. Implications for present and future leisure service delivery planning will be emphasized.

602 Organization and Administration of Recreation Systems. Semester course; 3 lecture hours. 3 credits. An analysis of administrative theories and patterns of management appropriate to the establishment and operation of community leisure service programs. Special emphasis will be given to organizational planning, goal setting, financial support, program evaluation, and the role of the administrator in a leisure service setting.

603 Research and Evaluation Processes in Recreation. Semester course; 3 lecture hours. 3 credits. Familiarizes student with the scientific approach to inquiry as applied to the study of the phenomenon of leisure. Basic research terminology, methodology, procedures, and concepts are explored with particular reference to the application of empirical investigation to topics of interest to professionals in the field of recreation and parks.

604 Research Practicum. Semester course; 3 lecture hours. 3 credits. Prerequisite: REC 603. Planning and execution of a professional paper or the first part of a research study on a topic in recreation chosen by the student in consultation with the instructor. Emphasis will be placed on problem identification, literature review, and research design.

605 Program Development in Leisure Services for

Disabled Persons. Semester course; 3 lecture hours. 3 credits. This course will provide students with an opportunity to critically examine contemporary models of leisure service programming for disabled persons. Emphasis will be placed upon observation and analysis of medical-clinical custodial, therapeutic community/milieu, and education and training approaches to recreation for handicapped persons.

606 Current Issues in Leisure Services for Disabled Persons. Semester course; 3 lecture hours. 3 credits. An examination of contemporary issues affecting the delivery of leisure services and programs to disabled persons. Both the scope and nature of leisure opportunities available to disabled individuals are considered. Special emphasis is placed on the role of the municipal recreation department in providing leisure opportunities to disadvantaged groups.

607 Field Instruction. Semester course; 3 semester hours; 150 clock hours. 3 credits. Application of theoretical knowledge as a practicing professional in a service delivery agency. Basic knowledge, attitudes, and skills necessary to function as a provider or manager of leisure services will be assessed by a faculty member and field supervisor. Enrollment only by permission of departmental graduate committee.

608 Recreation and Tourism Planning. Semester course; 3 lecture hours. 3 credits. Analysis and planning of recreation and tourism resources in the development of an effective comprehensive leisure services delivery system.

609 Program Development and Management. Semester course; 3 lecture hours. 3 credits. Analysis of the individual, political, and societal determinants of recreation programming. Covers the factors influencing leisure behavior and the role of the program supervisor in recreational and leisure settings. The course also deals with the evaluation of recreation and park programs and with the research functions in recreation programming.

690 Recreation Seminar. Semester course; 3 lecture hours. 3 credits. Restricted to second semester graduate students who have completed the research methods course. Individual graduate thesis and research topics will be discussed as will topics of current specialized interest to the recreation field. Each student will review and report on research efforts related to specific problems in their own area of interest.

797 Research Project. 3 credits. Prerequisite: REC 603. The research project involves a systematically planned and executed scholarly project committee utilizing an approved methodology for investigating and reporting on a major issue pertinent to the student's interest in the recreation field.

798 Thesis. 3 credits. Prerequisite: REC 603. The master's thesis involves a carefully planned and executed research study under the supervision of an advisor and thesis committee utilizing the traditional standards for thesis writing.

Department of Rehabilitation Counseling

FACULTY

Gandy, Gerald L. *Associate Professor and Director, Undergraduate Program in Rehabilitation Services* Ph.D., University of South Carolina; individual counseling approaches, rational emotive techniques.

Harber, Harlan E. *Assistant Professor and 504 Compliance Officer* Ph.D., University of Kansas; attitudes and disability, architectural barriers.

Hardy, Richard E. *Professor and Chairman* Ed.D., University of Maryland; Diplomate in Counseling Psychology (ABPP); counseling (both individual and group), substance abuse.

Jarrell, George R. *Associate Professor* Ph.D., University of South Carolina; forensic rehabilitation, medical aspects of disability and clinical practice.

Lassiter, Robert A. *Professor* Ph.D., University of North Carolina; vocational evaluation, work adjustment and independent living in rehabilitation.

Lawton, Marcia J. *Assistant Professor and Director, Alcohol and Drug Education/Rehabilitation Program* Ph.D., Northwestern University; alcohol and drug rehabilitation, child psychology.

Luck, Richard S. *Associate Professor* Ed.D., University of Virginia; rehabilitation administration, measurement and evaluation.

Martin, E. Davis, Jr. *Associate Professor and Assistant Dean* Ed.D., University of Virginia; administration and supervision, research.

Rule, Warren R. *Associate Professor* Ph.D., University of South Carolina; individual counseling approaches, Adlerian lifestyle counseling.

Underwood, J. William, III *Assistant Professor and Director, Work-study Program* Ph.D., Syracuse University; rehabilitation psychology, individual and group counseling.

Wright, Keith C. *Professor* M.S., Marshall University; introduction to rehabilitation (Professional identity, function, and ethics), community resources.

The rehabilitation counseling program at Virginia Commonwealth University was established in 1955 to provide graduate education in rehabilitation counseling.

This program prepares prospective rehabilitation counselors for employment in state and federal vocational rehabilitation programs and public and private rehabilitation agencies. Graduates work in rehabilitation units in mental hospitals, correctional institutions, public schools, rehabilitation centers, sheltered workshops, adjustment centers, social service agencies, and other organizations serving persons who are mentally, emotionally, socially, or physically handicapped. It also provides advanced training for persons presently employed in agencies and facilities offering services to handicapped individuals.

Emphasis is placed upon professional education for developing the skills and knowledge necessary for effective rehabilitation counseling of handicapped persons. The variety of activities performed by rehabilitation counselors necessitates a program highly diversified in character. In addition to the development of a broad understanding of human behavior, techniques of individual and group counseling, inter-professional relations, vocational appraisal and adjustment, and use of community resources in facilitating rehabilitation of mentally, emotionally, socially, and physically handicapped persons are stressed.

VOCATIONAL EVALUATION AND WORK ADJUSTMENT SPECIALIZATION

This program emphasis is established to meet the following needs: 1) to provide students (full- or part-time) an opportunity to become effective workers in vocational evaluation and adjustment at entry-level positions with the state-federal and private rehabilitation facilities; 2) to provide a curriculum plan for employed professional staff of public and private rehabilitation facilities in order for them to reach a high level of competence in their work with severely and multiply disabled people; 3) to offer consultations and to conduct workshops and institutes to improve and extend services to the more severely disabled population of the Richmond area; and 4) to assist facility administrators in planning and implementing new service areas such as independent living in rehabilitation.

Graduates of this specialization will have the opportunity to become employed in state and federal rehabilitation agencies as well as public and private facilities offering vocational evaluation and work adjustment services. The occupational outlook in this field for the present and the future is excellent.

INSTITUTES AND WORKSHOPS

The Department of Rehabilitation Counseling conducts institutes and workshops as part of an on-going in-service training program for employed personnel. The

department will continue to conduct such institutes and workshops as long as there is a demonstrated need and funds are available.

AWARDS

The Wade O. Stalnaker Award for Outstanding Achievement is presented annually to a full-time graduate student in the Department of Rehabilitation Counseling. Initiated by the graduating class of 1963, this award was named in honor of the founder of the department, Dr. Wade O. Stalnaker.

The recipient is selected on the basis of meritorious academic scholarship, dedication to the philosophy and concepts of rehabilitation, and extracurricula accomplishments in community services.

WORK-STUDY PROGRAM OF PROFESSIONAL EDUCATION IN REHABILITATION COUNSELING

The purpose of this program is to maintain a comprehensive, coordinated, and fully professional course of study in rehabilitation counseling that is offered on a continuous part-time basis. Classes meet on alternate weekends, both Fridays and Saturdays, and are offered through the Division of Continuing Studies and Public Service of Virginia Commonwealth University. Friday night classes meet from 7 to 9:40 pm, Saturday classes meet from 8 to 10:40 am and from 11 am to 1:40 pm.

Students may enroll for one or more courses, depending on their needs. Up to nine hours of credit can be earned by qualified students upon satisfactory completion of a full academic year in this program. The work-study academic year runs from September through May.

The specific objective of this training program is to increase substantially the effectiveness of the rehabilitation counseling profession by making a high-quality training program available to presently employed professional workers whose skills and abilities need up-grading and who desire to prepare themselves academically for a career in rehabilitation counseling but are unable to do so on a full-time basis.

This program is not intended to be a supplementary or introductory program. It is designed to be a complete, comprehensive,

and sequential program of graduate training leading to a master's degree in approximately four years for qualified part-time students. These students will be unable to meet the graduate residence requirements by completing 12 hours in a calendar year; therefore, their residence requirement shall consist of the completion of nine graduate hours in two academic semesters.

The entire core curriculum in rehabilitation counseling will be included in the offerings over a four-year span of time, with certain supplementary classes that may be necessary in special instances.

ALCOHOL AND DRUG EDUCATION/REHABILITATION PROGRAM

Established in 1975 as the Alcohol Education Program, the program changed its name to the Alcohol and Drug Education/Rehabilitation Program (ADERP) in the fall of 1979. This reflects the enlarged scope of the program which has come to include all types of chemical (physical and/or psychological) addiction. The new title of the program also reflects the fact that students progressing through these courses often become aware of their own alcohol/drug problems or those within their families and seek help; thus there is a rehabilitation nature to the educational sequence.

ADERP was established to meet the following objectives: 1) to define, increase, and evaluate the competencies and skills of professional alcoholism and drug counselors; 2) to increase the scope of knowledge about alcohol and drugs for clinical supervisors, program managers, medical personnel, mental health workers, and those in other fields serving as gatekeepers; 3) to develop and train new personnel for the alcohol and drug field; and 4) to conduct alcoholism and drug rehabilitation research.

The four objectives stated above are being met through the following five tracks: alcoholism and drug counselor, clinical supervisor, program director, medical, and informational. Both workshop and academic courses are designed to meet the objectives through these tracks.

Graduate studies leading to a master's

degree are made available to full-time, part-time, or work-study students. A concentration package is also available in the undergraduate curriculum for students who choose the Alcohol and Drug Education/Rehabilitation Option. Graduate and undergraduate programs provide classroom-based courses as well as workshops for academic and/or continuing education credit.

Courses are also open to other rehabilitation students as well as business students (in the Personnel Industrial Licensing Program), nursing students, psychology students, and others, as electives.

In accordance with the mandate from the Virginia General Assembly for certification of all alcohol and drug counselors in the state, ADERP developed an approved program of education to meet requirements as stated by the Virginia Alcoholism Counselor Certification Committee and is aspiring to meet those more recently established by the Virginia Drug Counselor Certificates Committee. Education for certification involves the completion of 400 hours of approved alcohol education which includes the following six areas of competency: communication, knowledge of alcohol use and alcoholism, understanding the recovery process, counseling and treatment, information, and referral and case management skills. This 400-hour educational program consists of 220 contact hours with the appropriate didactic/experiential ratio and 180 practicum hours which may be fulfilled either through the academic degree program or by successfully completing the progression of seminar and nondegree academic courses. The 500 hours of educational requirements for the certification of drug counselors is included in the program and is in the process of being specified on a per course basis.

Instruction addresses a core body of knowledge which is inclusive of the following courses: Overview of Alcoholism and Drug Abuse; Recovery of Alcoholism and Drug Abuse; Treatment of the Alcoholic/Drug Addict with the Significant Others (Family); and Principles, Methods, and Techniques in Treatment of the Alcoholic and Drug Addict (Group Interaction). Also, a focus on direct application of this core body of knowledge (220 hours of didactic and experiential education) is experienced, in

the field, by all students before completion of the course sequence as they accomplish Littlejohn's 22 Tasks in a clinical setting under supervision through the Practicum/Internship course.

In addition to the core body of knowledge, areas of special interest are addressed in Crisis Intervention with the Alcoholic and Drug Addict, Prevention, Case Problem Conference, Occupational Alcoholism and Drug Abuse Program Development, and other courses, depending on the individual's educational level and area of interest.

ADERP's growth in training through education parallels its initiation and subsequent expansion into the greater Richmond community. Contributions of the program to the community include: multi-disciplinary informational contacts; referrals to various agencies, skilled instructors, and speakers available upon request; knowledgeable counselors who value accountability and professionalism (as seen in those seeking certification and recertification), exchanges of current trends in treatment and education as transmitted by students doing internship/practicum placements at local agencies. Also included are increased awareness as enhanced by multimedia coverage of workshops and other events; individual rehabilitation of some program participants that return to the community with a message of hope in recovery while supporting AA, Al-Anon or concerned persons programs, and finally, ADERP is a vital part of the community support network.

The Alcohol and Drug Education/Rehabilitation Program has established itself as a foundation of the educational community as well as the greater Richmond community and the overall state structure where alcohol or drug education/rehabilitation is a new frontier. Information on academic courses and all workshops is available in the ADERP brochures and/or supplements and the university bulletins.

For further information, write or call the Department of Rehabilitation Counseling, Alcohol and Drug Education/Rehabilitation Program, Virginia Commonwealth University, 812 West Franklin Street, Richmond, VA 23284, (804) 257-6233.

SPECIALIZATION AREAS

The Department of Rehabilitation Counseling through its courses and those in other departments offers specialization areas to all graduate students within the department. These areas include: 1) mental health rehabilitation; 2) correctional rehabilitation (public offender rehabilitation); 3) vocational evaluation and work adjustment; 4) services to the severely physically handicapped; 5) community resources utilization and development; 6) counseling (individual and group); 7) alcohol and drug rehabilitation; and 8) manpower planning.

Courses provide considerable flexibility for students who wish to emphasize special concerns. Internships are provided in mental health, correctional settings, or other settings (such as vocational evaluation and work adjustment units in various rehabilitation facilities). Students may emphasize working with physically handicapped persons and the development of community resources through special courses such as rehabilitation case studies, occupational information, job analysis and placement, work evaluation techniques, work adjustment techniques, and internship. A course in rehabilitation research is also offered and is usually directed toward a student's area of special interest. Faculty members encourage students to select term papers and research project topics to emphasize areas in which they have the highest level of interest.

All students should note, however, that it is not necessary to specialize or choose a sequence area. This is available only for students who wish to become highly specialized in a specific area of rehabilitation.

ADMISSIONS

Beyond the general graduate school admissions standards, the following procedures and requirements apply:

1. In place of the Graduate Record Examination, applicants may elect to prove their ability to complete graduate studies and gain admittance by completing nine hours of undergraduate courses, earning a 3.0 ("B") average in courses specified by the chairman of the Department of Rehabilitation Counseling.

2. A personal interview with the chairman is required. If this is impractical, the chairman will designate an alternative for a pre-acceptance interview.
3. The Department of Rehabilitation Counseling evaluates the applicant's fitness for a career in rehabilitation counseling. Careful attention is given to previous work experience, academic background, scholarship, and emotional maturity. The application is then reviewed and passed upon by the Admissions Committee.

TRANSFER CREDIT

A maximum of six semester hours of acceptable graduate credit earned in a degree program at an accredited institution but not applied towards an awarded degree may be transferred and applied toward the M.S. degree. Such credits will be evaluated for acceptance purposes at the completion of nine semester hours of work in the graduate program in rehabilitation.

CANDIDACY

Admission to graduate study does not constitute candidacy for a degree. Rather, a student who has been admitted to graduate study is advanced to degree candidacy upon the recommendation of the department in which the degree is sought. Advancement to degree candidacy requires that the candidate must have completed between nine and 15 semester hours of graduate study with a minimum grade point average of 3.0; demonstrated clearly the aptitude and ability to pursue graduate work, including independent study; exhibited a commitment to rehabilitation counseling as a profession; demonstrated promise for a successful career in the field selected in terms of temperament and personality. Admission to degree candidacy is not an automatic process, but rather the application for candidacy is approved by the department only after careful evaluation of all pertinent factors.

REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN REHABILITATION COUNSELING

In addition to general graduation requirements

1. Students must complete a minimum of 39 graduate semester credits, approved by the chairman, exclusive of any credit for supervised clinical practice for rehabilitation counselors or required research with an overall grade point average of 3.0 or above.
2. Application to degree candidacy may be made after the student has demonstrated his ability to pursue work of graduate character by satisfactorily completing a semester of residence credits (nine credits minimum; 15 credits maximum) and satisfactorily completing an oral or written examination administered by the chairman. Admission to degree candidacy is given upon certification of acceptable records of achievements by the student's advisor.
3. A student without acceptable experience in the field of rehabilitation must complete supervised clinical practice for rehabilitation counselors under the direction of the faculty and the immediate supervision of a qualified person in an approved agency or facility.
4. All students must pass a comprehensive examination. It is administered by the chairman after students have completed a minimum of 30 graduate credits.
5. Students who have had successful employment in a rehabilitation agency or facility or other successful work experience involving individual case study and adjustment of handicapped persons may, upon approval of the faculty, meet the requirements for supervised clinical practice by successful completion of an additional three graduate semester credits in a research project.

SUPERVISED CLINICAL PRACTICE

Supervised clinical practice in a rehabilitation agency setting is required of all students who have had no previous rehabilitation agency experience. Supervised clinical practice provides an opportunity for students to develop techniques and skills in connection with the total rehabilitation process. It gives them an opportunity for

application of theory in the practice of rehabilitation counseling and case management in a rehabilitation setting. Provided under the direction of the faculty and the immediate supervision of qualified personnel in approved rehabilitation agencies or facilities, supervised clinical practice constitutes full-time study for one semester.

Students who have acceptable counseling experience in rehabilitation must either enroll in supervised clinical practice or participate in a special project approved by the chairman.

Voluntary activities or introductory field experience may not be substituted for, nor counted toward, supervised clinical practice.

Numerous agencies and organizations in Virginia and other states have cooperated with the Department of Rehabilitation Counseling to provide students with opportunities for supervised clinical practice. The primary sources of training are state-federal vocational rehabilitation agencies, Veteran's Administration, Employment Security Commission, social service departments, correctional institutions, hospitals, clinics, sheltered workshops, and evaluation centers. The disability areas have included physical (e.g., spinal cord injury, visual impairments, orthopedic disabilities, speech and hearing disorders, etc.), psychiatric, mental retardation, alcoholism, drug addiction, public offenders, the disadvantaged, etc. The student's advisor will be able to provide the names, addresses, and telephone numbers of agency supervisors who have worked with students in the past. Information regarding a variety of community resource directories is also available.

CORRESPONDENCE AND FURTHER INFORMATION

Further information may be obtained by writing to the chairman of the Department of Rehabilitation Counseling, School of Community and Public Affairs, Virginia Commonwealth University, 812-814 West Franklin Street, Richmond, VA 23284, (804) 257-1132.

GRADUATE COURSES IN REHABILITATION COUNSELING (REH)

502 History and Techniques of Manual Communication

I. 3 credits. A study of the basic principles of manual communication through nonverbal techniques, eye-contact training, fingerspelling, and basic patterns of American Sign Language Systems. Also a focus on history and development and various methods of communication with deaf persons.

503 History and Techniques of Manual Communication II. 3 credits. A review and continued study of the development and techniques of basic sign language with emphasis upon additional sign vocabulary acquisition and improvement of expressive and receptive skills.

504 Advanced Manual Communication: AMESLAN. 3 credits. A comprehensive and in-depth study of the American Sign Language (AMESLAN) as an independent language of the deaf with low verbal skills and emphasis on English and sign language idioms not known in most forms of manual communication.

505 Attitudinal, Access, and Architectural Barriers in Rehabilitation. 3 credits. Will emphasize legislation concerning non-discrimination, affirmative action, and architectural and transportation barriers. Will review the scope of the problem as well as the A.N.S.I. standards designed to overcome many of the obstacles to full participation in society. The course will involve field and laboratory exercises in handicap awareness. Students will meet with disabled persons to review the variety of mobility and access problems they encounter.

520 Introduction to Vocational Rehabilitation. 6 credits. This course provides an intensive five-week exposure to the broad field of vocational rehabilitation. Conducted on the grounds of the Woodrow Wilson Rehabilitation Center, classroom, seminar, and laboratory experiences are employed relative to the full range of physical and mental disabilities. Interaction with the various professional members of the vocational rehabilitation team and with individuals with various disabling conditions is arranged. The rehabilitation counselor's role and function as a member of the team is stressed. Enrollment is limited to eligible employees of public and private vocational rehabilitation agencies and facilities.

521 Overview on Alcoholism. 3 credits. Overview of alcoholism as a progressive, family disease which can be arrested by multidisciplinary, rehabilitative approach; consideration of the etiology of alcoholism from physiological, psychological, and socio-cultural viewpoints as well as methods of intervention at various stages; description of the highlights of the continuum of care available in the recovery process.

522 Recovery of Alcoholism. 3 credits. Exploration of the denial system present in U.S. society which complicates the early intervention and treatment of a progressive, family disease; presentation of new hope for the alcoholic and his family in the attempts being made in certain areas of society to begin the recovery process early; description of approaches proving to be helpful in facilitating the alcoholism professions in guiding the alcoholic and his family from isolation to involvement and integration.

523 Principles, Methods, and Techniques in Treatment of the Alcoholic. 3 credits. Prerequisites: REH 521 and 522 or permission of instructor. Integration of prin-

ciples, methods, and techniques utilized in the recovery process of alcoholism, especially in group work; exploration of the alcoholic, with provision for group involvement, co-facilitation, and practice counseling sessions.

525 Introduction to Rehabilitation. 3 credits. This course is designed to give the student a comprehensive overview of the rehabilitation process. It emphasizes its historical, philosophical, ethical, social, and legal aspects. Special attention is devoted to the professional aspects of rehabilitation counseling, the need for it and the skills and functions of the counselor.

527 Rehabilitation of the Industrially Injured Client. Semester course; 3 lecture hours. 3 credits. This course emphasizes the unique needs of the industrially injured client and current methods of rehabilitation and programs available through insurance companies and governmental agencies.

528 Prevocational Adjustment Practices With Mentally Retarded Persons. Semester course; 3 lecture hours. 3 credits. This course is designed to acquaint the student with the prevocational adjustment practices as these relate to the rehabilitation process. Emphasis will be placed on activities and information and geared toward complete rehabilitation of mentally retarded persons as well as utilization of community resources.

533 Directed Readings in Rehabilitation. 3-6 credits. Topical course. Provides an opportunity for students to intensify understanding in one or more areas of rehabilitation through directed readings under supervision of a faculty member. The study experience must be synthesized in a paper and a written or oral examination before a faculty committee.

538 Rehabilitation and Hearing Impairment. Semester course; 3 lecture hours. 3 credits. Offers material on rehabilitation aspects of hearing impairments. Covers the implications of hearing loss and deafness in terms of the size of the hearing impaired population, services available in terms of vocational rehabilitation, and other agency efforts. It also focuses on methods of communication and the understanding of language development. The concept of multiple disabilities will be discussed as will some aspects of mental health and prevention. Offers material on the "deaf community" and emphasizes developments of understanding of this special population group.

539 Current Problems in Rehabilitation. 3-6 credits. Topical seminar. A study of development and implications resulting from rehabilitation research and demonstration activities. Agency problems related to staff improvement and expansion of rehabilitation services and facilities will also be considered as well as reviews of specific disability problems and trends in rehabilitation.

540 Directed Readings in Alcoholism. Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. Opportunity to investigate and pursue in depth a particular concept encountered in the alcoholism concentration courses or to study in detail a particular problem in alcoholism while working in the field; under the direction of the alcoholism personnel in the department.

551 Treatment of the Alcoholic with Significant Others. Semester course; 3 lecture hours. 3 credits. Prerequisites: REH 521, 522, and 523 or permission of instructor. Stress on the importance of the family disease concept of alcoholism utilized throughout the concentration series; demonstrations and role-playing of situations involving the alcoholic and significant others provided; discussions of multiple-impact family therapy and other approaches developed relevant to the alcoholic.

559 A Survey of Rehabilitation of Blind and Visually Impaired Individuals. 3 credits. The purpose of this course is to acquaint the student, rehabilitation counselors, and other personnel working in related areas with problems encountered in the rehabilitation of blind and partially sighted persons.

561 Work Evaluation Techniques for Rehabilitation. 3 credits. An in-depth examination of the methods and techniques utilized in determining employment potential and the role of the work evaluator in the rehabilitation process. Specific procedures and approaches are analyzed including the TOWER System, Singer-Graflex System, and other methods currently utilized in rehabilitation services.

562 Work Adjustment Techniques for Rehabilitation. 3 credits. An in-depth analysis of methods utilized in overcoming maladaptive worker behavior in rehabilitation services including group process, sheltered workshops, and nonverbal techniques. The role and function of adjustment personnel in the rehabilitation process. Current problems and research in methods of adjustment.

563 Independent Living in Rehabilitation. 3 credits. This course will offer students an opportunity to acquire the knowledge and skills necessary for providing services to severely disabled people in the area of independent living. Emphasis will be placed on evaluation and adjustment approaches for people who are clients of public and private rehabilitation centers, employment workshops, group homes, and in the emerging centers for independent living in rehabilitation.

593 Field Work Practicum. 3 credits. Designed to complement and follow REH 520, this eight-week on-the-job experience is jointly supervised by a university faculty member and by the student's training supervisor in the public or private rehabilitation agency or facility where the student is employed. A choice of exercises is offered with required written reports of each exercise selected. These exercises are programmed to encourage the further integration of concepts, practices, and skills learned in REH 520 with actual agency policy and service delivery. Enrollment is limited to eligible employees of public and private vocational rehabilitation agencies and facilities who have completed REH 520.

607 Community Resources. 3 credits. This course emphasizes the means by which the community uses its resources and services to meet the needs of handicapped persons. It provides for study and discussion of the nature and organization of community resources as they relate to rehabilitation, availability of community resources through public and private agencies and facilities including employment potentials, problems in

the development and utilization of community resources, observational visits to key agencies, and lectures by representatives of various rehabilitation programs.

611 Individual Counseling Approaches in Rehabilitation. 3 credits. This course is designed to acquaint students with various approaches involved in the individual counseling of rehabilitation clients. Emphasis will be placed on principles and techniques which assist individuals to develop a better understanding of vocational, educational, and personal adjustment problems related to severe and multiple disabilities and to make realistic plans regarding solutions to these problems. Audio-visual tape experiences will be offered.

612 Group Counseling Approaches in Rehabilitation. 3 credits. This course is designed to acquaint students with various approaches involved in the group counseling of rehabilitation clients. Emphasis will be placed on principles and techniques which promote the development of effective interpersonal communications, decision making, and leadership as they concern vocational, educational, and personal adjustment problems related to severe and multiple disabilities. Audio-visual tape experiences will be offered.

613 Advanced Rehabilitation Counseling Seminar. 3-9 lecture hours. 3-9 credits. Prerequisites: REH 611 and 612 or permission of instructor. This course is designed to provide an opportunity for students to undertake a more in-depth study of selected approaches to individual and/or group counseling of rehabilitation clients. Principles and techniques relevant to vocational, educational, and personal adjustment problems related to severe and multiple disabilities will be systematically explored and studied. Audio-visual tape experience will be offered.

623 Occupational Information, Job Analysis, and Placement. 3 credits. Provides an orientation to occupations and career development information for rehabilitation counselors, study of the literature on careers and occupational information, writing the job analyses, visits to selected business and industrial establishments employing handicapped persons, and job analyses related to the employment of handicapped individuals.

625 Measurement and Evaluation in Rehabilitation. 3 credits. Consideration will be given to the selection of tests for rehabilitation clients; the determination of need for testing, administering and interpreting tests; adaptation of tests to special disability groups; suggestions for the integration of tests results with the overall rehabilitation diagnosis; the establishment of local norms for rehabilitation clients; the work-evaluation report; and interpretation of tests results to client. Tests of achievement, aptitude, intelligence, interest, and personality will be critically examined. Laboratory fee \$4.

633 Rehabilitation Case Studies. 3 credits. This course provides for critical analyses of representative rehabilitation cases. Rehabilitation case records are utilized as a basis for presenting an understanding of the handicapped client and his problems; the rehabilitation

casework processes and diagnoses; and the provision of services.

635 Theory and Practice in Prevention of Alcoholism. 3 credits. Prerequisite: permission of instructor. Utilization of human service agencies and community at large to affect attitude and behavior change concerning the use and abuse of alcohol; development of skills in educating, coordinating, motivating, planning, and implementing in prevention area; project in prevention.

640-641 Medical Information for Rehabilitation Counselors. 3-6 credits. This course provides medical information for rehabilitation counselors and introduces students to medical terminology. It provides knowledge of the etiology, prognosis, methods of treatment, effects of disabling conditions, and implications for the rehabilitation counselor. Physician-counselor relationships are emphasized as is the interpretation of medical reports. (This course is offered in cooperation with the Department of Rehabilitation Medicine, Medical College of Virginia of Virginia Commonwealth University.)

642 Psychiatric Information for Rehabilitation Counselors. 3 credits. This course provides psychiatric information for rehabilitation counselors so that they may have an understanding of disabling psychiatric conditions as well as the emotional aspects of physical disabilities. It deals with impairments of a mental origin including mental retardation, behavioral disorders, neuroses, and psychoses—both organic and functional, as well as convulsive disorders. Emphasis is placed on physical, emotional, and social factors that contribute to the various mental illnesses.

643 The Rehabilitation Facility and its Services to the Severely Disabled. Semester course; 3 lecture hours. 3 credits. This course is designed to offer the student material on the rehabilitation facility and programs of facility services to the severely disabled. Special emphasis will be placed on materials, information, and activities which will enable each student to achieve a comprehensive understanding as to the development and operation of the facility services by personnel which facilitates the rehabilitation of handicapped persons.

644 Alcohol and Human Behaviors. 3 credits. Prerequisites: REH 521, 522, 523, and 695 or permission of instructor. Understanding the significance of behavior as a tool in diagnosing, treating, and/or referring the alcoholic; appreciation of particular cues to observe the predominant behavior associated with living problems and reflected by the alcohol abuser.

645 Delivery Services to the Alcoholic. 3 credits. Prerequisites: REH 521, 522, 523, and 691 or permission of instructor. Exposure to the 22 professional tasks of the alcoholism counselor through discussion centered around examples brought into class from clinical experience; understanding how these tasks dealing with the alcoholic and his family apply to different settings; a summary of the other five parts in the alcoholism concentration culminating in a philosophy of the alcoholism counselor.

650 Occupational Alcoholism and Drug Abuse Program Development. 3 credits. This course is designed to provide information and data for graduate

students on the importance of the effects of alcohol and other drugs in a work setting. Various types of programs used by business, industry, and other organizations to deal with such employees will be presented. The course context was developed to provide the student with the opportunity to gain knowledge and skills necessary to design, implement, and maintain systems to reduce human and productivity losses due to alcoholism/drug addiction and its effects.

651 Rehabilitation Systems. 3 credits. The problems of the executive in the development and utilization of the rehabilitation organization and its resources to achieve program objectives are reviewed with an emphasis on decision making, motivating, handling conflict, and exercising leadership. Comparative systems and roles of federal, state, and local rehabilitation executives are studied and analyzed.

653 Disability and Support Systems. 3 credits. This course will offer students an opportunity to acquire knowledge and skills in working with the social, medical, and vocational organizations which comprise the interpersonal environment in which the client's rehabilitation takes place. Emphasis will be placed on evaluating the strengths and weaknesses of the various human systems in which the client lives and works. Theories and techniques will be taught which can maximize the rehabilitative potential of these systems.

655-656 Seminar in Rehabilitation. 3-6 credits. Current trends, problems, and developments in rehabilitation are discussed. Students pursue a special interest area such as cultural deprivation, disability determination, work adjustment, work evaluation, etc., and share information and experience mutually with the group. Lectures, reports, and group discussions are utilized.

657-658 Seminar in Audiology in Rehabilitation. 3-3 credits. This course provides an orientation to audiology as it applies to the rehabilitation process. It includes history of the education of the deaf and hard of hearing, methods of instruction, diagnostic testing and evaluation, and special lectures pertaining to rehabilitation of the acoustically disabled and problems confronted by the counselor or teacher in providing adequate services to this disability group.

672 Research in Rehabilitation. 3-6 credits. The student undertakes a research project with the assistance of a faculty member. He is required to write a paper and pass an examination in order to receive credit.

681-689 Institutes and Workshops. Orientation institutes and other short-term training programs are offered for rehabilitation counselors newly recruited to the rehabilitation field and for the further professional development of those already employed. Content will vary according to the aims of the institutes or workshops. Length of time and number of credits are announced prior to each institute or workshop.

691 Seminar in Special Problems in Rehabilitating Handicapped Persons. 3-6 credits. Typical seminar. This course is presented in a series of units. Each unit places emphasis on a special disability group such as paraplegic, deaf and hard of hearing, alcoholic, epileptic, cerebral palsied, cardiac, blind, mentally

retarded, mentally ill, drug addict, aged, etc. The incidence and nature of disabilities, psychological factors, vocational problems, and specialized treatment and placement facilities required and techniques of team approach; use of rehabilitation centers and specialized facilities and use of consultants.

693 Introduction to Field Experiences for Rehabilitation Counselors. 3 credits. This course provides for concurrent field experience. It is designed for students who have no training or experience in interviewing and counseling in rehabilitation settings.

694 Practicum in Job Placement in Rehabilitation Counseling. 3 credits. This course provides for actual experience in rehabilitation counselor activities, with emphasis on placement techniques—including itinerary planning, plant surveys, job analysis, placement, and follow-up.

695 Supervised Clinical Practice in Alcoholism. Block assignment; 8 credits. Prerequisites: REH 521, 522, and 523. Practical learning by observing and doing the 22 tasks of the alcoholism counselor as outlined in the Littlejohn Report; general direction and supervision by alcoholism personnel within department and direct supervision by a person qualified within the facility to discuss counselor/client problems.

696-697 Supervised Clinical Practice. Block assignments; 8 credits. Practical learning by observing and doing. Trainees have many opportunities for the application of theory in the practice of rehabilitation counseling and case management and/or work evaluation and work adjustment in a rehabilitation setting. Training is provided under the general direction and supervision of the faculty and the direct supervision of a qualified person within the agency or facility. Students meet regularly with the clinical practice supervisor within the agency or facility to discuss clients' problems and possible solutions.

750 Seminar in Rehabilitation Administration and Supervision. 3 credits. Current theoretical and research knowledge shall provide for the coverage of numerous construct needs such as the federal perspectives, the states' perspectives, organizational roles and functions, leadership administrative practices, management, supervision, and other relevant needs.

798-799 Thesis. 1-3 credits. The master's thesis consists of either a carefully planned and executed research undertaking or a detailed and comprehensive report on a supervised clinical practice experience. Generally, a thesis of the latter type in the latter form will carry one credit and will be taken in conjunction with REH 696-697.

Department of Urban Studies and Planning

FACULTY

Brown, John C. *Assistant Professor* Ph.D., University of Pittsburgh; urban finance, policy analysis.

Fonoroff, Allen *Professor and Chairman* J.D., Columbia University Law School, planning law, land use planning.

- Gulak, Morton B. *Associate Professor* Ph.D., University of Pennsylvania; architecture and urban design, urban revitalization and physical planning.
- Moeser, John V. *Associate Professor* Ph.D., George Washington University; metropolitan reform, racial politics.
- Osby, William J. *Assistant Professor* Ph.D., Cornell University; social planning, research design and methodology, education, rural development, common health.
- Rugg, Robert D. *Associate Professor* Ph.D. University of Ottawa; planning information systems and computer cartography, recreation demand analysis.
- Schexnider, Alvin J. *Associate Professor and Associate Dean* Ph.D., Northwestern University; urban politics, intergovernmental relations.
- Schulz, Peter *Associate Professor* Ph.D., University of Illinois; land use, remote sensing.
- Silver, Christopher *Assistant Professor* Ph.D., University of North Carolina; urban history, housing and neighborhood planning.

The graduate program in urban and regional planning is recognized by the American Planning Association and seeks to provide rigorous professional grounding in the theory and methodologies of planning through a curriculum that balances classroom and field experience.

The Master of Urban and Regional Planning (M.U.R.P.) is a two-year degree program requiring 48 semester hours of classwork and six hours of internship. A core of required courses, most of which are taken in the first year, includes:

- Introduction to Urban and Regional Planning
- Problems in Urban and Regional Planning
- Planning Methods I: Planning Information Systems and Research Design
- Planning Methods II: Plan Formulation and Implementation Strategies
- Urbanization and Land Use Theory
- Legal and Legislative Foundations of Planning
- Cartography and Planning Graphics
- Programming and Budgeting
- Planning Studio I and II

Students may choose a broad program in comprehensive planning, or may elect one of the several concentrations including:

- Land Use and Environmental Planning
- Urban and Regional Economic Development
- Community Services Planning
- Health Planning
- Information Systems

The emphasis in land use and environmental planning is on problems at the interface between social systems and the physical environment. It is expected that students specializing in this sequence will graduate with knowledge and skills necessary to prepare land use plans, taking into account the social and economic issues of community development as well as the constraints imposed by the physical environment. This concentration provides exposure to at least one functional aspect of physical planning, such as housing, physical environment, recreation, or transportation.

The concentration in urban and regional economic development is oriented toward students interested in careers ranging from regional and community economic development and human resources planning to fiscal analysis and research planning for metropolitan planning agencies. The focus is on urban and regional economic theory, economic analysis, and formulation of strategies and programs for local economic development.

Students desiring to serve as human service planners or community action planners may specialize in community service planning. This concentration combines planning techniques, law, and politics with studies in community needs assessment, policy analysis, and design of delivery systems in such areas as manpower training, neighborhood organization, and preservation, health, and welfare.

The concentration in health planning has been developed in cooperation with the Department of Health Administration in the School of Allied Health Professions. Students may earn the Master of Urban and Regional Planning degree with intensive training in health care resources and planning techniques as preparation for careers with health planning agencies.

The concentration in information systems within the master's degree program in urban and regional planning is designed to provide higher level graduate courses for future planners in public and private agencies so that they may develop computer capabilities. The concentration will also be advantageous to those interested in a research career in planning.

DUAL DEGREE PROGRAM IN LAW AND URBAN AND REGIONAL PLANNING

A cooperative arrangement with the T. C. Williams Law School makes it possible for students to receive a law degree (J.D.) and an urban and regional planning degree (M.U.R.P.) in four years rather than the five years ordinarily required.

The purpose of the program is to integrate the two professional curricula, and to provide the expertise necessary to apply legal analytical skills and planning methods and analysis to urban and regional policy issues and problems. The dual degree program is designed to equip graduates for a variety of professional positions including staff for legislative committees and government agencies and commissions, government legal staff, private consulting, neighborhood advocacy, directorships of planning and related agencies, and executive aides to elected officials.

Interested students must separately apply for and be admitted to the T. C. Williams School of Law, University of Richmond, and the Department of Urban Studies and Planning, VCU. Students will spend their entire first year in either the School of Law or the Department of Urban Studies and Planning, and their second year in the program not selected in the first year. Fifteen credit hours (one semester of course work) of the planning program will be applied toward meeting the graduation requirements of the School of Law, and 12 credit hours (one semester of course work) in the School of Law will be applied toward meeting requirements of the Department of Urban Studies and Planning.

Upon admission to the dual degree program, every student will be assigned an advisor in each program who will assist in planning the course of studies that will include all of the required courses in each program plus such elective courses as will best serve the interests of the individual student.

Students deciding not to complete the dual degree program must meet all of the regular requirements of the J.D. or M.U.R.P. to receive either degree of their choice.

CERTIFICATE PROGRAM IN PLANNING INFORMATION SYSTEMS (CPI)

The Certificate in Planning Information Systems (CPI) is a program to provide specialized cross-disciplinary training for professionals with either (a) data processing or (b) planning backgrounds, who wish to increase their knowledge and skills in the application of computer methods to urban and regional planning problems. The CPI program consists of 15 hours of required courses in Information Systems and 15 hours in Urban Studies among the requirements for the existing Post-Baccalaureate Certificate in Information Systems program.

RESEARCH AND RELATED ACTIVITIES

Politics and Planning in Richmond, Public Policy and Blacks in the Urban South, Neighborhood Planning: Past, Present and Future

Air Photo and Remote Sensor Interpretation, Land Use and Environmental Management

New Federalism, Federal and State Enterprise Zone Programs and Economic Development

Urban Revitalization and Adaptive Reuse
Computerized Planning Information Systems, Hypergraph-Based Data Structures, Statewide Outdoor Recreation Demand and Supply

Social Development, Social Policy, National Development Planning.

Fiscal Planning and Criminal Justice Planning

ADMISSION

Beyond the general graduate school admissions standards the following apply:

1. Students must have a minimum of a 2.7 grade-point average (on a 4.0 scale) in their last 60 semester hours of undergraduate work. In addition, a grade-point average of not less than 3.0 must have been maintained in their undergraduate majors. Finally, applicants are expected to receive a minimum score of 400 on each of the categories in the Graduate Record Examination.
2. Students not meeting these require-

ments may be admitted to the program on a probationary basis. The probationary period shall consist of the first 12 hours of graduate work in which all grades must be no less than "B."

3. Generally, two of the three letters of reference should come from former faculty.
4. The latest dates for submitting application materials are June 1 to be considered for the following September, and December 1 for the following January. However, all candidates—especially those applying for financial aid—are urged to apply before March 1 in order to have the best chance of being accepted or receiving an award of financial assistance for the following academic year. Applicants who submit materials by March 1 will be notified of the decision of the Admissions Committee by mid-April.

PART-TIME STUDENTS

Because virtually all courses may be taken in the evening, the program accommodates both full- and part-time students. Students may also take advantage of courses offered in the summer. Thus, it is possible for a part-time student taking six credit hours per semester to finish the master's degree in four years or less.

TRANSFER CREDIT

Upon acceptance to the program, up to six hours of graduate credits with grades of "B" or above may be applied to the degree if such work is considered relevant by the Admissions Committee.

Students admitted to the graduate program may register for selected courses offered by the T. C. Williams Law School of the University of Richmond. A list of such courses appears under the title "Law Electives." No more than nine credit hours of law electives may be transferred, and students must receive a grade of "B" or above in such course work.

FINANCIAL AID

The university maintains a Financial Aid Office which is discussed in Part I of this bulletin.

There is also a limited amount of financial aid provided by the Department of Urban Studies and Planning. Application forms are available from the department for the following forms of aid:

1. Graduate Assistant Positions. Duties involve helping in the instruction of courses in the Departments of Urban Studies and Planning and Recreation. The level of support varies according to the work level, financial need, and scholarship.
2. Tuition Scholarships. There are a limited number of tuition scholarships for full-time students.
3. Research Assistant Positions. The stipend and number of positions depend upon the level of sponsored research carried out by the department in each year.
4. Department Assistant. There are funds available for work in the department office. Duties include typing, filing and helping with department projects. The pay is by the hour, from ten to 20 hours a week.
5. T. Edward Temple Memorial Scholarship Award. This award of approximately \$400 to \$500 a year is given to an outstanding graduate student.

REQUIREMENTS FOR THE DEGREE OF MASTER OF URBAN AND REGIONAL PLANNING

(In addition to general requirements)

1. Students must complete a minimum of 54 graduate credits, including 48 credits of course work and six hours of internship.
2. A minimum of at least half of the courses required in the program shall be those designated as exclusively for graduate students; that is, those at the 600 level or above.
3. Although approval is normally granted, students must acquire the approval of their advisors before enrolling for any unspecified elective.
4. In USP 752 Planning Studio II or USP 798 Projects students must obtain a grade of "B" or better on this Final Project to be eligible for the receipt of the M.U.R.P. degree.

INTERNSHIP AND PLACEMENT

The internship is designed to give students practical experience in planning related activities in an institutional context. Normally, the internship is taken during the summer between the first and second year. Permission is necessary from the chairman before the internship is begun.

Students who are already or who have been employed in planning positions may use that experience to satisfy the internship requirement. Approval of such experience by the chairman is required. In those cases where the internship requirement is waived, students are required to complete six additional semester hours of planning course work.

There are many opportunities for internship positions, as well as part-and full-time jobs in planning at all levels of government within the Richmond area. Agencies in which students have found employment include the planning departments of the city of Richmond; the Richmond Regional Planning District Commission; other regional planning commissions; and the counties of Henrico, Chesterfield, Goochland, and Prince George. Students have also been employed in state agencies such as the Department of Housing and Community Development, the Water Control Board and the Governor's Council on the Environment.

CORRESPONDENCE AND FURTHER INFORMATION

Further information may be obtained by writing to the chairman of the Department of Urban Studies and Planning, Virginia Commonwealth University, 812 West Franklin Street, Richmond, VA 23284, (804) 257-1134.

CURRICULUM

I. First Year, First Semester	<i>Credits</i>
USP 514 Cartography and Planning Graphics ..	4
USP 531 Introduction to Urban and Regional Planning.	3
USP 671 Planning Methods I Planning Information Systems and Research Design.	4
Electives.	3

II. First Year, Second Semester	
USP 532 Problems in Urban and Regional Planning.	3

USP 633 Urbanization and Land Use Theory . . .	3
USP 651 Legal and Legislative Foundations of Planning.	3
USP 672 Planning Methods II Plan Formulation and Implementation Strategies.	4
Electives.	1

III. Internship

USP 793 (Normally taken between the first and second year of work but other options are available)	6
--	---

IV. USP Second Year

USP 522 Programming and Budgeting	3
USP 751-752 Planning Studio	6
or USP 751 Studio I and USP 798 Projects ¹	
Electives ⁴	12
	54

OPTIONAL CONCENTRATIONS

The courses in the optional concentrations are taken as electives in the regular curriculum. Thus, a student wishing to specialize would devote most of his first year to required courses, while most of the second year would be devoted to his specialty.

LAND USE AND ENVIRONMENTAL PLANNING

Required Courses	<i>Credits</i>
USP 661 Principles of Urban Design	3
USP 741 Environmental Management Planning I	3
Plus at least three of the following course.	9
USP 652 Planning, Administration, and the Legal Process	
USP 721 Open Space Planning	
USP 732 Metropolitan Circulations Systems	
USP 742 Environmental Management Planning II	
USP 745 Dynamics and Issues in Housing	
BUS 627 Urban Land Development Planning	

15

Recommended Electives

(see bulletin for courses given in alternate years)

USP 571 Introduction to the Study of the Future
USP 641 Social Change and Community Planning
USP 682 An Economic Approach to Environmental Issues
USP 721 Open Space Planning
USP 731 Economic Development Planning
USP 782 New Towns Planning
USP 797 Directed Research
USP 798 Thesis or Project

¹Prerequisite, all core courses.

⁴Students who select the Land Use and Environmental Management Planning Option will substitute USP 741 Environmental Management Planning I and take USP 661 Principles of Urban Design, in the second year.

COMMUNITY SERVICES PLANNING**Required Courses**

USP 511 Urban Public Policy Making Processes	3
USP 536 Urban Poverty Law	3
USP 641 Social Change and Community Planning	3

or

USP 512 Metropolitan and Regional Public Management	3
Plus any two of the following courses (see bulletin for courses given in alternate years) . .	6
USP 571 Introduction to the Study of the Future	
USP 721 Open Space Planning	
USP 722 Recreation Systems Planning II	
USP 731 Economic Development Planning	
USP 745 Dynamics and Issues in Housing	
REH 525 Introduction to Rehabilitation	
REH 607 Community Resources	
AJP 612 Public Safety: Policy Issues in Administration of Justice	
AJP 655 Public Safety: Planning Politics of Community-Based Corrections	
SLW 766 Perspectives on Aging	
HAD 614 Health Planning and Policy	

15

URBAN AND REGIONAL ECONOMIC DEVELOPMENT**Required Courses***Credits*

USP 511 Urban Public Policy Making Processes or USP 512 Metropolitan and Regional Public Management	3
USP 731 Economic Development Planning	3
ECO 616 Advanced Public Finance	3
Plus any one of the following: (see bulletin for courses given in alternate years)	3
USP 522 Programming and Budgeting	
USP 536 Urban Poverty Law	
USP 682 An Economic Approach to Environmental Issues	
ECO 532 Manpower Economics	
ECO 611 Concepts of Economics	
ECO 616 Advanced Public Finance (if not taken as a requirement)	

12

INFORMATION SYSTEMS**Required Courses****Credits*

BUS 667 Distributed and Teleprocessing Systems	3
BUS 645 Operations Research	3
BUS 664 Topics in Information Systems	3
BUS 668 Computer-aided Decision Making	3

12

*The following courses or their equivalent are prerequisites to the concentration:

- BUS 365 Systems Design
- BUS 463 Programming Laboratory (FORTRAN) (1)
- BUS 464 Data Base Systems

HEALTH PLANNING**Required Courses***Credits*

HAD 602 Health Care Organization and Services	3
HAD 624 Health Economics (or equiv.) or	3
HAD 662 Health Care Politics and Policy	3
HAD 614 Health Planning and Policy	3

12

Law Electives

Advanced Real Estate Transactions	3
Consumer Protection	3
Employment Discrimination Law	2
Environmental Law	3
Legislation	2
Mortgages and Surveyship	4
State and Local Taxation	3
Community Mental Health Law	3

GRADUATE COURSES IN URBAN AND REGIONAL PLANNING (URP)

511 Urban Public Policy-Making Processes. Semester course; 3 lecture hours. 3 credits. A study of the dynamics of conflict resolution in behalf of and within the urban community; the manner in which competing interests are articulated and aggregated in attempts to shape urban public policy, the various levels, and kinds of governmental machinery designed to resolve the conflicts.

512 Metropolitan and Regional Public Management. Semester course; 3 lecture hours. 3 credits. Examines the relationship between metropolitan growth and the fragmentation of government systems; assesses capacity of fragmented government systems to formulate rational public policy in relation to forces impeding or facilitating political integration of a metropolitan area; evaluates mechanism designed to governmental fragmentation.

514 Cartography and Planning Graphics. Semester course; 2 lecture hours and 4 laboratory hours. 4 credits. Introduction to the use of graphics as an aid in presenting and analyzing planning ideas, data, reports, maps, and plans. Use of computer methods will be emphasized. Also included are methods of map compilation, map design, computer mapping, and the use of geographic base files in urban and regional planning. Lab fee required.

515 Cartography and Air Photo Interpretation. Semester course; 2 lecture and 2 laboratory hours. 3 credits. An introduction to the preparation and interpretation of data in cartographic form. Included is the methodology of map making, introductory photogrammetry, object recognition, stereograms, area measurement, and mapping from aerial photos.

522 Programming and Budgeting. Semester course; 3 lecture hours. 3 credits. Principles and procedures of budgeting by government units and public agencies as they affect planning, policy making, implementation, and evaluation. Topics covered include an overview of budgeting theory; line item, performance, program, management by objectives, and zero base budgeting.

531 Introduction to Urban and Regional Planning. Semester course; 3 lecture hours. 3 credits. Introduction to the history, concepts, and activities of urban planning and their relationship to the ethics and responsibilities of planners.

532 Problems in Urban and Regional Planning. Semester course; 3 lecture hours. 3 credits. Regional planning concepts. Trends in urbanization and the planning responses.

536 Urban Poverty Law. Semester course; 3 lecture hours. 3 credits. Examines and evaluates developing case law and selected legislation in areas of special concern to low and moderate income groups: legal services, public welfare law, labor law, housing law, family law, consumer law, and criminal procedure.

540 Historic Preservation in Planning. Semester course; 3 lecture hours. 3 credits. The course surveys the process of historic preservation which includes the evaluation of sites, identification of architectural styles, the adaptive use of sites and structures, and the various sources available for implementing preservation proposals in government or in the private sector. Preservation is considered as a tool in the planning process and its application to neighborhoods, downtowns, and other city districts is considered.

551 Local Government Law. Semester course; 3 lecture hours. 3 credits. Law governing local government operations; especially emphasizing Virginia. Control of the state and local operations, role of commonwealth's attorneys and local governing boards, legal staffs, and related issues.

552 Urban Transportation Systems. Semester course; 3 lecture hours. 3 credits. An examination of urban requirements for mobility, transportation systems, problems of traffic, mass transit, and new concepts for moving people and goods.

561 Housing and Development Policy. Semester course; 3 lecture hours. 3 credits. An examination of public policy in housing and development as it has evolved and is evolving in application and practice. The course will focus on the most recent experimentations and adjustments in policy at the national and local levels. Also included are the classic studies of housing and development as a social problem.

571 Introduction to the Study of the Future. Semester course; 3 lecture hours. 3 credits. Considers the perspectives, assumptions, and forecasts of futurists and the methods and tools of future research; examines those forces which are presently shaping the future environment and addresses issues of paramount importance in the '80s and '90s.

581 Land Use and Site Planning. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Principles of land planning and analysis are investigated in both classroom and studio settings. Environmental impacts and the capacity of environmental systems are evaluated in relation to the site requirements of various urban and rural situations. Graphic techniques necessary for applying these principles are described so that the student can develop and evaluate site plans for various purposes and at various scales. Actual site planning

exercises are used as a way of grasping the course information.

633 Urbanization and Land Use Theory. Semester course; 3 lecture hours. 3 credits. Interregional differences in urbanization, both historically and among nations: introduction to urban systems and urban land use theory, including sociological, economic and political approaches to urban spatial differentiation and urban problems, and implications for institutions and public policy.

641 Social Change and Community Planning. Semester course; 3 lecture hours. 3 credits. Analyzes social change and community dynamics as related to social goal setting in urban and regional planning. Deals with urban and metropolitan areas as a system of interacting social groups: techniques of establishing interrelationships between social goals and other planning elements emphasized.

651 Legal and Legislative Foundations of Planning. Semester course; 3 lecture hours. 3 credits. Delineates the legal and legislative basis for planning at local, state, and federal levels. Judicial precedents in land use controls are investigated, including private controls, traditional zoning, administration of zoning ordinances, new flexible zoning concepts, development timing and growth controls, exclusionary land use practices, subdivisions controls, and eminent domain.

652 Planning, Administration, and the Legal Process. Semester course; 3 lecture hours. 3 credits. Major emphases are administrative law, legislation, and substantive environmental law. Judicial review of administrative actions; notice, hearing, investigative requirements; the planner and administrator as expert witnesses; legislative language; drafting of legislation; legislative process; NEPA: air, water, and water-lands; solid waste; herbicides and pesticides; noise; and critical man-made areas are investigated.

661 Principles of Urban Design. Semester course; 3 lecture hours. 3 credits. Principles of urban design at the micro-and macro-scale. Expression of planning objectives in physical design, with emphasis on the relationship between urban design at various scales and the needs of individuals and groups.

671 Planning Methods I: Planning Information Systems and Research Design. Semester course; 4 lecture hours. 1-4 credits. Research methods applied to problems of planning and public policy. Statistical analysis through multiple regression. Introduction to data sources and methods of survey research. Introduction to data processing and the use of statistical packages for the computer.

672 Planning Methods II: Plan Formulation and Implementation Strategies. Semester course; 4 lecture hours. 4 credits. Prerequisite: USP 671. Emphasizes policy analysis, statements, and presentation of policy alternatives; development of strategies to intervene in problem situations; elements of plan formulation; techniques and tools for plan implementation; implementation as an iterative process; and the selection of implementation strategies.

681 Human Resource Planning. Semester course; 3

lecture hours. 3 credits. Prerequisite: USP 380 and 480 or permission of instructor. This course entails the application of data analysis and planning techniques to a community's human resource needs. It will provide experience in the preparation of human resource plans and enable students to be involved with government agency activities.

682 An Economic Approach to Environmental Issues. Semester course; 3 lecture hours. 3 credits. The effect of externalities in terms of efficiency and equity considerations. The role and problems of benefit cost analysis in decision making. The interrelationship of air, water, and land quality issues is analyzed. The use rate of natural resources, energy consumption, and the steady state economy and their impacts are evaluated.

691 Topics in Urban and Regional Planning. Semester course; 1, 2, or 3 credits. Students will have an opportunity to examine in detail some question of significance in the field of urban and/or regional planning. Due to the changing subject matter to be treated in this course, permission of the instructor is required. Consult the Schedule of Classes for the specific topic to be offered each semester.

721 Open Space Planning. Semester course; 3 lecture hours. 3 credits. An examination of the demand for and value of open space, such as natural, agricultural, and recreational areas, in the context of urban and regional planning. Open space as a city-forming device and as a positive land use. Standards and criteria for development and performance of open space systems. Strategies for conservation of open space within urban regions.

722 Recreation Systems Planning. Semester course; 3 lecture hours. 3 credits. General principles of planning and development of local and regional recreation areas and facilities. Investigation of standards relative to size, location, and programs. Review of national and statewide outdoor recreation plans, and trends in recreation development. A practical exercise in recreation planning to be completed in the field.

731 Economic Development Planning. Semester course; 3 lecture hours. 3 credits. Examines current theories of economic development as they relate to low income groups, political jurisdictions, and metropolitan-wide economic systems. Emphasis on the structuring of economic development strategies for metropolitan areas that encourage the imbalance between high-growth peripheral areas and the inner city area of decline.

732 Metropolitan Circulation Systems. Semester course; 3 lecture hours. 3 credits. Examination of urban activity systems and their requirements for mobility. Explores the impact of technological change in communication and transportation modes on access and circulation patterns.

741, 742 Environmental Management Planning. Semester course; 3 lecture hours. 3, 3 credits. Defines the impact of urban activities on the natural environment within a metropolitan context and stresses dependency relationships between man-made and natural environments. Applies resources and management concepts to the use of land, air, and water.

745 Dynamics and Issues in Housing. Semester course; 1, 2, or 3 credits. Prerequisite: USP 561 or permission of instructor. Examines and evaluates current problems in urban housing within the dynamics of metropolitan development. Students will pursue individual or group projects on a housing issue.

751-752 Planning Studio. Continuous course; 6 studio hours. 6 credits. Individual student projects intended to give the student experience in applying theory and methodology gained from the second year course offerings to solve selected planning problems. USP 798 Projects is an acceptable substitute for USP 792 Planning Studio II. Consent of instructor and chairman required for this substitution.

782 New Towns Planning. Semester course; 3 lecture hours. 3 credits. Extensive evaluation of new towns and planned unit development (PUD) concepts and experiences; changes in communication and transportation technology, changes in employment requirements as they will affect future life styles; and anticipated shifts in local requirements on urban functions (Not offered every year, consult the Schedule of Classes.)

793 Planning Internship. 6 credits or two semesters, 3 credits each. Prerequisite: approval of department chairman. Eight to ten weeks full-time equivalent participation in a public or private planning-related agency. Grading on a "pass-fail" basis.

797 Directed Research. 1-3 credits. May be repeated for a total of six credits. Prerequisites: permission of instructor and graduate standing. Independent research into planning problems, issues, and theories.

798 Thesis or Projects. 2-6 credits. Prerequisites: permission of instructor and appropriate research methods course. Planning, preparation, completion, and presentation of a thesis or project. USP 798 Projects is an acceptable substitute for USP 752 Planning Studio II. Consent of instructor and chairman required for this substitution.

For descriptions of courses in other departments, see that department's listings.

Center for Public Affairs

Ralph Hambrick, Director
Jennifer Lantrip, Assistant Director for Development
John C. Pignato, Assistant Director for Continuing Education

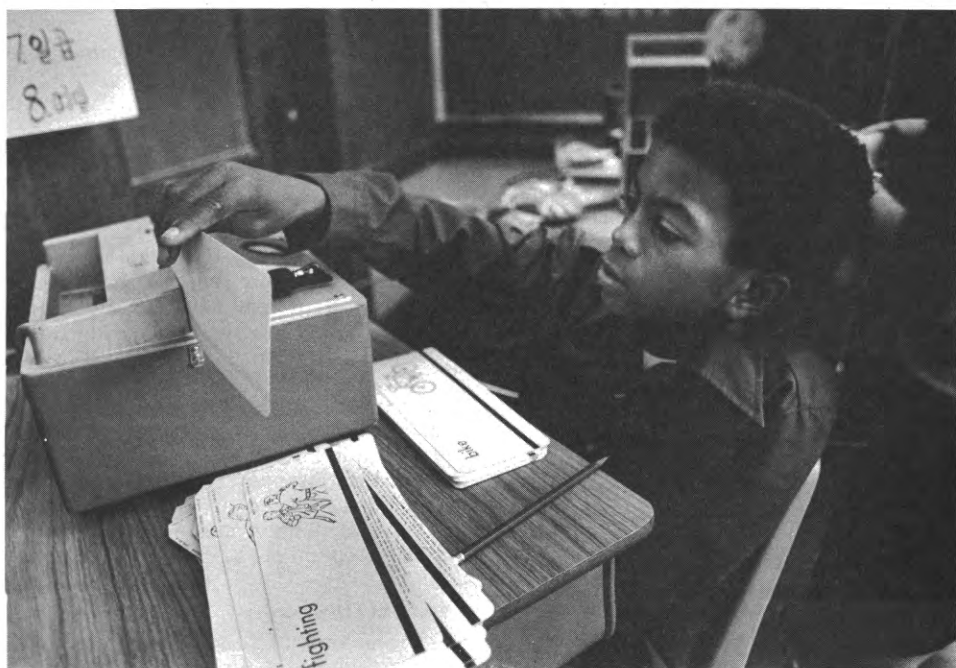
In 1978, Virginia Commonwealth University established the Center for Public Affairs as a unit within the School of Community and Public Affairs. The center is designed to provide university-based assistance to federal, state, and local government and other publicly-oriented organizations through applied research, continuing education and training, and technical assistance. It operates from a multi-disciplinary knowl-

edge and skill base in addressing areas of particular interest to the public, emphasizing the delivery of responsive, practical, and cost-effective service.

The center's programs focus both on general public management concerns (such as productivity, personnel practice, and financial management) and on the needs and content areas of specific organizations (such as recreation, human resources, and public

safety). Participants in many continuing education programs may earn Continuing Education Units (CEU's).

The center does not grant degrees, but does work closely with academic departments. Faculty members from a variety of schools and departments work with the center; student involvement through employment and individual or class projects is encouraged as opportunities are developed.



PART VIII—School of Education

ADMINISTRATIVE OFFICERS

CHARLES P. RUCH

Dean

JOHN S. OEHLER, JR.

Acting Assistant Dean

A. GAYNELLE WHITLOCK

Assistant Dean

C. GORDON KEESEE, JR.

Director of Student Services

JEFFREY C. SOUTHARD

Acting Director of Continuing Education

RIZPAH L. WELCH

Director of Educational Development
Center Complex

The School of Education was established in 1964 as a part of Richmond Professional Institute. At that time the school granted bachelor's degrees in elementary education only and offered courses required for certification in some secondary fields.

Today, the School of Education offers various programs leading to the master's degree as well as an interdisciplinary Ph.D. degree in urban services. Programs in administration and supervision, adult education, counselor education, distributive education, elementary education, English/English education, library/media, physical education, and special education are available. The School of Education's graduate programs emphasize field-based teaching experiences and research to enable students to tailor their courses of study to meet individual needs and professional interests.

The School of Education is accredited by

the Virginia Department of Education, the Southern Association of Schools and Colleges, the National Council for Accreditation of Teacher Education, and holds membership in the American and Virginia Associations of Colleges of Teacher Education.

PURPOSE

The School of Education is committed to providing relevant programs responsive to the needs of various educational agencies and, at the same time, improving and enhancing the professional skills of its students. Primary purposes of the school are to provide quality professional education which develops and refines teacher competencies in light of continuous social change; to nurture among faculty and students a deep involvement in educational research and scholarly activity which improves instructional procedures, assists school systems and agencies in identifying and solving educational problems, and enhances and extends knowledge of the field of education; and to provide continuing professional support services to public school systems and agencies in the Richmond metropolitan area and surrounding cities and counties.

FACILITIES

The majority of the facilities of the School of Education are housed in Oliver Hall,

which is designed to provide traditional classrooms as well as laboratory and activity centers.

Teacher Resource Center

The Teacher Resource Center is a multimedia materials development unit serving the entire school. Media and photography laboratories, including a TV/micro-teaching facility, offer students a setting to plan, develop, and criticize their own instructional strategies and materials. A microcomputer laboratory housing TRS-80 and Apple II hardware and an expanding software library are a part of this unit. Available also are collections of teacher materials on such topics as multicultural programs, mainstreaming, and metric education usage.

A multisided, open-spaced area on the fourth floor is designed for a number of creative teaching activities. This laboratory classroom lends itself to dance movement demonstrations, art work displays, dramatic presentations, and symposiums on prominent education topics.

Education Development Centers Complex

Other facilities utilized by the School of Education are the Reading/Child Study Center, the Day Care Center, and the Adult Learning Center. At each center students work with members of the community, faculty, and other students to foster educational growth. Taken together they form a complex of practicum locations for the comprehensive study of educational problems at any age and provide major clinical resources for students and faculty for on-campus training and research.

The Reading/Child Study Center on the Academic Campus offers diagnostic and remedial assistance to VCU students as well as to individuals in the community. It brings together prospective teachers, psychologists, and social workers to function as a team in a practicum setting. The Reading/Child Study Center also serves as a materials center for teacher trainees by providing an opportunity to see and use a variety of instructional and testing materials.

A well-equipped Adult Learning Center provides unique opportunities for students and other clientele. The center is housed on the Academic Campus and utilizes the latest

advances in educational technology and individualized instruction where flexible scheduling is featured. Remedial and enrichment noncredit study programs are offered in a variety of areas to VCU employees and college students.

Activities through the Day Care Center, located on the Medical College of Virginia Campus, are designed to provide quality services for children of working parents, particularly the children of university employees and students. When space permits, non-university associated families may use its facilities. Additionally, the Day Care Center provides practicum experiences for students on both campuses.

In addition to on-campus facilities, graduate work at VCU enables students to engage in or to continue teaching experiences in local school systems or agencies. These experiences provide students with the opportunity to apply their learning in actual educational situations.

ORGANIZATION

The chief administrative office for the school is the Office of the Dean. The school is organized into the Divisions of Educational Services; Educational Studies and Adult and Vocational Education; Health and Physical Education; and Teacher Education.

OFFICE OF STUDENT SERVICES

The Office of Student Services serves as a center for information, materials, and applications necessary for certification and endorsement of educational personnel in Virginia. Coordination of placement for practica, student teaching, internships, and externships is administered by this office. Student teachers and externs are placed primarily in the school systems of the city of Richmond; Henrico, Chesterfield, and Hanover Counties; and increasingly in Goochland, Powhatan, and New Kent Counties as well as the city of Petersburg.

Application forms and deadline dates are available in the Office of Student Services.

This office also coordinates information about and the administration of several national testing programs including the College Level Examination Program (CLEP), the Medical College Admissions Test

(MCAT), the National Teacher Examinations (NTE), and the Graduate Record Examinations (GRE). Finally, the Office of Student Services is responsible for the distribution and collection of all materials regarding application to graduate study in the School of Education.

OFFICE OF CONTINUING EDUCATION AND FIELD SERVICES

The Office of Continuing Education and Field Services coordinates all offerings in the area of continuing education for the school. Off-campus offerings and in-service training opportunities include day-long in-service events, a series of structured workshops designed for certificate renewal or graduate credit, credit or noncredit courses, degree programs, and field studies and evaluation projects.

CERTIFICATION FOR EDUCATIONAL PERSONNEL

All graduate programs in the School of Education are approved by the Virginia Department of Education. Virginia is a member of the National Association of State Directors of Teacher Education and Certification (NASDTEC), which has a national reciprocity agreement for teacher certification. Certification is based in part on successful completion of an approved program developed in response to nationally recognized standards. All graduate programs within the School of Education have approved program status and are a part of the NASDTEC Certification Reciprocity Agreement.

FINANCIAL AID

A limited number of fellowships are awarded for full-time graduate study by the School of Education. All applicants for fellowships must be admitted to a graduate program in order to be eligible. The deadline for making application is June 1. Forms may be obtained from the Office of Student Services. Information on financial aid administered by the University may be found in Part I of this bulletin.

MASTER'S DEGREE PROGRAMS

The School of Education offers three master's degrees. A Master of Education degree is offered in 12 areas: administration and supervision; adult education; counselor education; curriculum and instruction; library/media; mathematics; occupational education; special education: early childhood handicapped, emotionally disturbed, learning disabilities, and mentally retarded; and reading. A Master of Science degree is offered in physical education and a Master of Arts degree is offered in English/English Education.

ADMISSION

Any student holding an earned baccalaureate degree from an institution acceptable to Virginia Commonwealth University may take appropriate graduate-level courses. However, only six semester hours of appropriate graduate credit may be transferred toward a degree. This regulation applies whether the courses have been taken at Virginia Commonwealth University prior to admission or whether the courses are accepted on transfer from another institution.

Admission to a degree program involves admission to both graduate study in the School of Graduate Studies and to a specific degree program. Some individual degree programs have admission requirements beyond the general school requirements. Applicants complete one set of credentials specifying the degree program to which they are seeking admission.

PROCEDURES

Admissions applications and additional information may be obtained from University Enrollment Services, Graduate Admissions, 821 West Franklin Street, Richmond, VA 23284, (804) 257-0334.

Completed materials, transcripts, test scores, and all inquiries regarding admission should be directed to this office.

GENERAL ADMISSION REQUIREMENTS

The admission decision will be made on an overall analysis of the following:

1. A minimum grade-point average of 2.8 on a 4.0 point scale on the last 60 semes-

ter hours of undergraduate academic study.

2. A minimum acceptable score on the Graduate Record Examination or Miller Analogies Test as specified in the requirements of the degree program to which the applicant is seeking admission.
3. An interview with the applicant may be required by the core faculty to which the applicant is seeking admission.

ELIGIBILITY FOR PROVISIONAL ADMISSION WITH CORE FACULTY APPROVAL

1. Applicants whose grade-point average during the last 60 semester hours of undergraduate course work falls between 2.4 and 2.79 on a 4.0 point scale would be considered for provisional admission based on the strength of scores on the designated admissions examination or other evidence of potential as determined by the core faculty.
2. Applicants whose scores fall below the minimum acceptable score on the Graduate Record Examination or Miller Analogies Test would be eligible only for provisional admission as determined by the core faculty.
3. The core faculty will review each provisional status application. In the review process, an interview with the applicant may be required. Additional qualifications, as defined by the core faculty, will also be considered at the time of review.
4. Applicants who accept admission on provisional status must take a minimum of three graduate-level courses (nine semester hours) designated by their advisor.
5. A provisionally-admitted student who earns a "C" or below in the first nine hours of course work designated by the advisor is no longer eligible to continue as a degree-seeking student in that core program.

SPECIFIC PROGRAM REQUIREMENTS

Programs in the Division of Educational Services

Three master's degree programs are offered:

1. Administration and Supervision. Applicants should have a minimum of two years successful teaching or equivalent experience. Ordinarily, the applicant will have an undergraduate degree which qualifies the applicant for professional certification as a teacher.

2. Counselor Education. Applicants anticipating endorsements as guidance counselors in Virginia public schools should hold a valid professional teaching certificate and have a minimum of one year's teaching experience.

3. Special Education. The programs in special education require that students applying for admission have a valid professional teaching certificate in an area of special education or meet that requirement prior to the granting of a Master of Education degree. For the program in learning disabilities, applicants must have a minimum of two years' successful teaching experience. For the program in emotional disturbance, one year of teaching experience is recommended, and a personal interview with program faculty is required. The preschool handicapped program requires two years of teaching experience.

Programs in the Division of Educational Studies

A master's degree in adult education is available. Students admitted to this program must maintain a 3.0 grade-point average on courses required by the degree program. Students who receive a grade of "C" or below on more than two of the total courses required by the degree program will be automatically dropped from the program.

Programs in the Division of Health and Physical Education

The master's degree in physical education is available not only to individuals who have a baccalaureate in physical education but also to other bachelor's degree holders. For students who did not major in physical education at the baccalaureate level, certain courses and experiences at the undergraduate level may be required prior to admission to full graduate status. Applicants who are currently in or are planning to enter the teaching profession should hold a valid professional teaching certificate in physical education or should meet that requirement prior

to the granting of the Master of Science degree.

Programs in the Division of Teacher Education

Applicants should hold a valid professional teaching certificate in an area of elementary education or should meet that requirement prior to the granting of a Master of Education degree.

Secondary education (mathematics education or English/English education) applicants must hold a valid professional teaching certificate in the appropriate field or must complete all certification requirements prior to the granting of a Master of Education degree.

GENERAL DEGREE REQUIREMENTS

The recommendation to confer a Master of Education or Master of Science degree is made by the faculty upon satisfactory completion of all degree requirements. These include successful completion of an approved plan of study, admission to candidacy, successful completion of a comprehensive examination, and a completed application for graduation. Each step is discussed below.

School of Graduate Studies degree requirements, such as time limits for degree completion, are found in Part I of this bulletin. All graduate students in the School of Education should be familiar with Part I.

I. Program of Study

An approved program of study consisting of no fewer than 33 semester hours of graduate credit is required for the master's degree in the School of Education. The distribution of credit is as follows:

- A. Foundations (nine hours distributed as outlined below).
- B. Program (minimum of 15 hours). Each candidate will complete at least 15 hours of graduate credit in a field of concentration as approved by the student's advisor.
- C. Electives. Each candidate may take electives that are related to the field of study or which will provide balance and breadth in the total program.

Specific electives must be approved by the student's advisor.

- D. Thesis or additional credit. These may be required in a specific degree program.

Foundations Requirements. All students will complete nine semester hours of work selected from approved courses in these foundation areas. Students must select one three-hour course from each of the following areas: human development and learning; cultural, historical, and philosophical; and research. Courses meeting the foundations requirement include

- A. Human Development and Learning
EDU 602 Adolescent Growth and Development
EDU 603 Seminar in Child Growth and Development
EDU 605 Psychology in the Schools
PSY 607 Advanced Educational Psychology
EDU 609 Learning Strategies for the Classroom
- B. Cultural, Historical, and Philosophical
EDU 601 Philosophy of Education
EDU 607 Social Foundations of Education
EDU 608 History of Western Education
EDU 612 Education and the World's Future
EDU 614 Contemporary Educational Thought
- C. Research
EDU 606 Review of Research
EDU 660 Methods of Research
PHE 602 Development of Research Techniques in Physical Education

Transfer Credit. A degree program in the School of Education is a carefully determined sequence. For this reason, transfer credit is not encouraged. A maximum of six semester hours of acceptable graduate credit earned from an appropriately accredited institution may be transferred and applied to degree programs in the School of Education. This regulation applies to graduate courses taken at Virginia Commonwealth University and to courses from other accredited institutions.

Disposition of transfer credits offered by

the applicant will be made by core faculty or a representative committee of the core following admission to candidacy.

As a general rule, continuing education courses taken at institutions other than Virginia Commonwealth University will not be transferred.

Admitted students may transfer up to six hours of credit, if they receive the approval of their advisor and division head *prior* to taking the credit.

Student Program Planning. Before enrolling in any graduate courses following admission to a program of study, students must complete and have approved a program plan. The program plan, developed cooperatively by students and their advisors and filed in the Office of Student Services, will outline the sequence of experiences students will include in their degree programs. *No departure from this proposed program of study will be permitted without the student's written request and the approval of the student's advisor and the division chairman. This request must be filed with the Office of Student Services in the School of Education.*

II. Admission to Candidacy

Admission to graduate study does not constitute candidacy for a degree. Rather, students who have been admitted to graduate study are advanced to degree candidacy upon the recommendation of the division in which the degree is sought.

- A. Advancement to degree candidacy requires that students must have completed at least nine but not more than 15 semester hours with a minimum grade-point average of 3.0.
- B. At least nine of the 15 hours being considered must have been taken in the core program from which students are seeking degree candidacy.
- C. The core faculty or a representative committee of the core will review each application submitted for candidacy. Additional qualifications, as defined by the core faculty, will also be considered at the time of review.
- D. Following the review, students will be notified in writing regarding candidacy status.

Advancement to degree candidacy requires that candidates must have completed at least nine but no more than 15 semester hours of graduate study with a minimum grade-point average of 3.0; must have clearly demonstrated the aptitude and ability to pursue graduate work, including independent study; must have exhibited a commitment to education as a profession; and must have demonstrated promise for a successful career in the field selected in terms of temperament and personality. Specific courses may be required prior to application for candidacy. Admission to degree candidacy is not an automatic process, but rather the application for candidacy is approved by the division only after careful evaluation of all pertinent factors. Only students who have been admitted to candidacy may pursue additional work toward the degree.

III. Comprehensive Examination

- A. All students in a graduate program in the School of Education must take a written comprehensive examination of at least three hours duration prior to receiving the degree.
- B. Written examinations will be given on the first Saturday in November, the fourth Saturday in March, and the second Saturday in July. Students must notify the department of their intention to take the exam at least 30 days prior to the published date. All comprehensive examinations must be taken on dates indicated except for religious or health reasons. Any exceptions must be approved in advance by the division chairman.
- C. A minimum of three faculty members, designated by the core faculty, will evaluate each examination independently. Satisfactory performance on the comprehensive examination requires approval of two of the three evaluators.
- D. Any student failing the comprehensive examination must have a joint conference with at least two core faculty members, one of whom is the student's advisor, before taking the comprehensive examination again.
 1. During the conference the core

faculty members may recommend additional academic preparation and/or competencies which must be met by the student prior to retaking the comprehensive examination.

2. The student will be notified by letter of the recommendations made

by the core faculty in the conference.

- E. The student will have only two opportunities to take the comprehensive examination.
- F. Failure to pass the comprehensive examination the second time will result in the student being dropped from the degree program.

Steps to Completing a Master's Degree

STEP	WHEN	WHERE
1. Admission	0—6 Hours	Office of Student Services
2. Program of studies	0—6 Hours	With advisor, approved by division chairman
3. Candidacy	9—15 Hours	Application approved by advisor, program faculty, chairman, Office of Student Services
4. Comprehensive examination	30 semester hours or beyond	Application to Division Office
5. Externship or internship	Usually last semester of course work	Application from Office of Student Services
6. Application for graduation	Last semester of course work. Deadline in current bulletin	Application from registrar approved by advisor, division chairman, dean's office and returned to registrar's office

IV. Application for Graduation

Students who expect to complete their degree requirements by the end of a semester or summer session are required to file an application for degree. Applications are available from University Enrollment Services and must be submitted by students to their advisors no later than the dates indicated in the calendar appearing in the *front* of this bulletin. Students should allow time for conferences with their advisors and should note that applications require the approval of the division chairman and dean.

SPECIFIC DEGREE REQUIREMENTS

A degree program in the School of Education is a carefully determined sequence of courses and experiences. Each program is individually designed within degree require-

ments, through the cooperative efforts of the students and the advisor, and must be filed in the Office of Student Services. The following materials explicate the usual degree course requirements; however, they are not a substitute for the advisement process. No program of study will be considered final until it has been approved by an advisor and filed in the Office of Student Services.

PH.D. IN URBAN SERVICES

The Ph.D. program in urban services is interdisciplinary in curriculum, design, and management, and will serve a variety of special audiences. The program is organized into the following four tracks:

1. *Educational Leadership Development*—

for line administrative personnel who provide continuing leadership in urban school units.

2. *Instructional Leadership Development*—for staff administrative personnel in urban school units, community colleges, and members of the State Department of Public Instruction, who provide continuing leadership.
3. *Human Resource Development Leadership*—for staff trainers in nonschool, business, community colleges, and industry who provide continuing leadership and training for management and employees in the urban setting.
4. *Urban Services Leadership*—for persons employed in positions in the urban community requiring less traditionally delineated preparation such as, but not limited to, crisis center directors, mental health and mental retardation personnel, and community agency administrators.

Each track utilizes curriculum and resources of the various schools of VCU. Applicants to the program are expected to be leadership personnel interested in increasing their responsibilities in school and agency settings. Applicants must have earned a master's degree in an appropriate profession or discipline related to a specific curriculum track in this program. Preference will be given to applicants who occupy positions of organizational leadership and have responsibility (or demonstrate potential) for planning, administering, conducting, and evaluating service programs.

The entrance requirements listed below reflect the aims of the program to provide continued academic growth for practitioners living in the community. The entrance requirements consist of a series of indicators which serve to predict an applicant's potential for successfully completing doctoral work. No indicator stands alone and the university takes into account many facets beyond those traditionally considered. The program's philosophy is one of seeking excellence through an admission process which realizes that many applicants are practicing professionals whose experience and achievements must be recognized.

Enrollment in the program is open to all otherwise qualified persons without regard

to age, race, sex, religion, physical handicap, or national origin, and admission requirements are in full compliance with all applicable federal and state statutes, orders, and regulations. Admission is highly competitive and preference is given to qualified applicants who demonstrate serious purpose, scholastic excellence, superior preparation, and appropriate experience for the program.

APPLICATION PROCESS

Admission decisions rest with the faculty of the program and are made only on the basis of a complete application packet. Applicants wishing admission to the program are responsible for submitting all parts of the admission packet (described below) by March 1 of the year they intend to enter the program.

The Admissions Committee will review all completed admission packets and choose the most qualified candidates to participate in the final selection process.

This process consists of personal interviews and a short essay written in conjunction with the interview process. Once interviews are complete, all applicants for admission will be notified of their status. Fewer than 25 persons will be admitted each year. Admission for the group entering in the fall takes place once a year, and students will be notified by April 15. There will be no other admission periods.

To be selected for the personal interview portion of the admission process, an applicant will have attained a cumulative grade-point average of at least 3.4 on all graduate work attempted or above-average scores on the Aptitude Section of the Graduate Record Examination. No one facet of data will automatically determine an admission decision.

Students interested in obtaining admission packets for the program may do so by contacting University Enrollment Services, Graduate Admissions, Virginia Commonwealth University, 821 West Franklin Street, Richmond, VA 23284, (804) 257-0334, or the School of Education, Office of Student Services, 1015 West Main Street, Richmond, VA 23284, (804) 257-1296. Questions concerning the specifics of the program

or requests for advisement should be directed to the latter office.

ADMISSION PACKET AND ENTRANCE REQUIREMENTS

Applicants for admission to this program must complete an admission packet. To be considered for admission, applicants must submit

Academic Criteria

1. A completed VCU Graduate School Application Form.
2. Two official and up-to-date copies of all transcripts of the applicant's undergraduate and graduate record indicating that the applicant has earned a master's degree from an accredited college or university.
3. Official and current scores for the Aptitude Section of the Graduate Record Examination. Advanced test scores are not required but may be submitted. A Graduate Record Examination indicates reasoning ability at a given point in time. If applicants have taken the examination more than five years prior to the year of expected admission, they must re-take the examination. Older scores may also be submitted, and the Admission Committee will consider time elapsed since last formal schooling, occupational success, and leadership ability.

External Criteria

1. A professional vita indicating educational and occupational experience, evidence of leadership potential, etc. Applicants must present evidence of sustained experience in leading, administering, planning, or evaluating programs and personnel in varied positions that are directly related to the chosen program track. This experience may come from professional civic, religious, fraternal, or advocacy organizations. Evidence may also include letters of recognition, awards, dates of positions, job responsibilities, supervisor's evaluations, important knowledge that came from the position, publications, and professional memberships.

2. Completed forms from three references. Applicants must submit
 - a. Names, addresses, and telephone numbers of three persons qualified and willing to rate the applicant's intellectual and leadership ability. If the applicant has attended school within the last three years, at least one of the references should be academic. Each of these persons will complete a form rating the applicant in a number of personal and academic areas. Submission of these names constitutes permission to contact these persons by telephone anytime during the admission decision process.
 - b. In addition to these three names, the applicants should submit the name, address, and telephone number of their current occupational supervisor. This person will be contacted by a representative of the Admission Committee and informed as to the full scope and requirements of the doctoral program. The supervisor is expected to support the applicant's educational goals and to be willing to provide released time for externship and other program related activities.

Self-Expression

Applicants are required to submit a written statement, as part of the admission packet, which discusses personal career goals, the manner in which this doctoral program enhances these goals, and what the applicants will contribute to this program. Applicants should treat this statement as a summary of goals and talents which goes beyond and does not duplicate the other submitted materials.

Once the application packet is complete, the packet will be reviewed by the program Admission Committee which will decide which applicants will proceed to the final admission stage.

FINAL ADMISSION STAGE

Applicants chosen for the final stage of the admission process will be invited to the university to be interviewed by program faculty. In addition to the interviews, applicants will write a brief essay on a topic assigned at the interview. Applicants will be

given at least two weeks notice as to interview date, time, and place.

DELAYED ADMISSION

Anyone admitted for a particular year may request delay of one year for entrance to the program. Normally this request will be granted. Individuals requiring a further delay will be required to reapply for admission. The request for delayed admission must be transmitted in writing to the doctoral program director and should state the reasons for the request and the date that the individual plans to begin the program.

TRANSFER CREDIT

The university policy concerning transfer credit is found in Part I of this bulletin. Transfer credit refers to graduate courses taken after the awarding of a master's degree and prior to admission to this program, whether taken at VCU or another accredited university. Note that credits earned for one degree cannot be applied to another degree. The rules for transferring credit to this program are

1. Transfer credit requests will be considered only after the student has completed 21 semester hours in the program and has passed the qualifying examinations.
2. There are no substitutes for the core courses, externship, or dissertation.
3. *Graduate credit* earned prior to the awarding of a master's degree is not transferable.
4. Students may apply up to nine credits applicable to another accredited graduate program toward the concentration or cognate areas. These credits must be acceptable by the offering institution toward its own graduate programs.
5. Each request for transfer credit must stipulate the program component to which it applies with attendant reasoning. Requests for transfer and substitution for a specific research or concentration course must include course syllabus, reading list, instructor's name, and any other pertinent material. Each request for transfer credit must be approved by the program director and must be judged appropriate for the development of the student's con-

centration or cognate area. To be valid for application to the program, transfer credit must have been taken no more than seven years prior to completion of all requirements (except the dissertation) for awarding the degree.

6. Admitted students are required to petition the doctoral program director for permission to study at other universities. Such petitions should include the name of the school, a course description, offering professor, and a statement on how the proposed course relates to the concentration or cognate area.

Students wishing exceptions to these transfer rules must petition the Track/Advisory Committee through their advisors and the program director. Their recommendations are submitted to the Graduate School for final action.

CURRICULUM

There are six components of the program leading to the Ph.D. in urban services:

1. **Core component**—Theoretical and social issues in urban institutional development and change (nine semester hours minimum)

PHI 635-The Philosophy of Social Sciences

EDU 701-Urban Education

SOC 650-Theories of Social and Institutional Change

These courses provide a foundation in theory and issues concerning urban institutions and the role and function of education in an urban setting. Students are encouraged to assess personal values, goals, and commitment to leadership.

2. **Research component**—Statistics, computer methods, and research design (nine semester hours minimum)

CSC 500-Computer Methods for Research

STA 543-Mathematical Statistics

EDU 710-Advanced Educational Research Design

Emphasis is placed on the skills essential to the design, conduct, and interpretation of research beneficial to an urban leader.

3. **Concentration component**—Major area of study (15 semester hours minimum)

Students pursue a series of courses in one of the four tracks to gain knowledge and skill in a chosen area of urban leadership applicable to the students' current or projected career.

4. **Cognate component**—Minor area of study (nine semester hours minimum)
Cognate courses in the educational leadership, instructional leadership, and human resource development leadership tracks will be taken outside the School of Education. This allows a secondary field of study to complement the student's major concentration. The urban services leadership track cognate courses may be taken in the School of Education or in another school.
5. **Externship component**—On-site work experience in a related work setting (three semester hours minimum)
Students will take an externship in a work setting related to their employment so as to develop an appreciation of the network of services offered to the urban population. The experience will lead to appropriate cooperation and interagency exchange.
6. **Dissertation component**—Dissertation planning and dissertation research (15 semester hours) In keeping with the purpose and objectives of the program, students will select a dissertation topic which relates to problems of urban services. A research prospectus will be developed and the dissertation completed.

POST-MASTER'S DEGREE OPPORTUNITIES

The school has an articulation agreement with the College of William and Mary in the area of counselor education. The basic purposes of the articulation agreement that established this program are to enhance the offerings in counseling at both institutions, to create flexibility in course options for students, and to expand the resources available to students at both institutions. The degree is a Doctor of Education and will be awarded by William and Mary.

All students applying for admission to the doctoral program will apply directly to William and Mary and will be required to meet the admissions criteria and procedures

of William and Mary. A joint faculty committee of the Division of Psychological Foundations and Services (W and M) and the Division of Educational Services, Counselor Education (VCU) will examine applications for consideration for the Admissions Committee, School of Education, The College of William and Mary.

The curriculum in the program is quite flexible, allowing students to pursue their special interests. The major areas of concentration are

- Student Personnel Services in Higher Education
- Community College Counseling
- Agency and Community Counseling
- Secondary School Counseling and Guidance
- Elementary School Counseling and Guidance
- Marriage and Family Counseling

Division of Educational Services

FACULTY

- Beale, Andrew V. *Professor* Ed. D., University of Virginia; counseling, career development, and parent education.
- Beers, Carol S. *Assistant Professor* Ed.D., University of Virginia; language development.
- Blankenship, M. Elise *Associate Professor* Ed.D., University of Houston; perceptual and cognitive processing in learning disabilities, delivery systems for special education.
- Bost, William A. *Professor* Ed.D., George Peabody College; managerial communications, educational improvement strategies.
- Duncan, Jack A. *Professor* Ed.D., University of Georgia; group procedures, communications.
- Fallen, Nancy H. *Professor* Ed.D., University of Maryland; assessment, preschool handicapped.
- Fleming, Robert S. *Emeritus Professor* Ed.D., New York University; curriculum development, education and the arts.
- Fuhrmann, Barbara S. *Associate Professor* Ed.D., University of Massachusetts; adolescence, group work.
- Garner, Howard G. *Associate Professor* Ph.D., University of Florida; special education, behavior disorders.
- Giacobbe, George A. *Assistant Professor* Ph.D., University of Georgia; special education, behavior disorders.
- Gumaer, James *Associate Professor* Ed.D., University of Florida; group counseling, counseling with children.
- Hill, Ada D. *Assistant Professor* Ed.D., American

- University; mainstreaming, mental retardation, learning disabilities.
- Judd, William J. *Associate Professor* Ph.D., Syracuse University; educational media.
- Keesee, C. Gordon, Jr. *Professor* Ed.D., University of Virginia; counselor education, educational measurement
- Lambie, Rosemary A. *Assistant Professor* Ed.D., University of Kansas Medical Center; special education-emotional disturbance, educational administration.
- Lokerson, Jean E. *Associate Professor* Ph.D., University of Maryland; language and learning disabilities, clinical diagnosis and teaching.
- Orelowe, Fred P. *Assistant Professor* Ph.D., University of Illinois; severely retarded, physically impaired.
- Ruch, Charles P. *Professor and Dean of the School of Education* Ph.D., Northwestern University; organizational analysis and development.
- Schneider, Frederick C. *Assistant Professor* Ed.D., Temple University; instructional design.
- Schwieder, Arthur W. *Assistant Professor* Ed.D., Temple University; educational media.
- Seyfarth, John T. *Associate Professor* Ed.D., University of Tennessee; developmental aspects of teachers' beliefs about their work, personnel management in schools.
- Sharman, Charles C. *Associate Professor* Ed.D., University of Virginia; public school finance, public school administration.
- Sparks, Howard L. *Professor* Ed.D., Teachers College, Columbia University; special education.
- Vacca, Richard S. *Professor* Ed.D., Duke University; educational law.
- Wehman, Paul *Associate Professor* Ph.D., University of Wisconsin; severely handicapped, vocational-career education.
- Welch, Rizzpah *Professor* Ed.D., Indiana University; special education, language development.
- Whitlock, A. Gaynelle *Associate Professor and Assistant Dean of the School of Education* Ph.D., University of Virginia; counselor education.
- Wood, Judy W. *Assistant Professor* Ph.D., University of Southern Mississippi; mainstreaming, mental retardation.

Graduate programs in this division include Master of Education degrees in administration; supervision; guidance and counseling; and in the special education areas of mental retardation, learning disabilities, behavior disorders (emotionally disturbed), and early childhood handicapped. Special concentrations are also available in classroom guidance, vocational technical education, and library/media. A joint program with the School of Social Work provides a dual certification for both counselor and visiting teacher. Also available through the School of Social Work is a cooperative certification program in school social work.

The basic programs leading to a Master of Education degree in mental retardation,

learning disabilities, behavior disorders (emotionally disturbed), and early childhood handicapped assume that students hold an initial educational certificate. Students who are not certified may enter the program and receive both the master's degree and initial certification by taking additional courses. Successful completion of the degree program leads to endorsement in mental retardation, learning disabilities, behavior disorders (emotionally disturbed), or pre-school handicapped.

In the graduate program in mental retardation, particular attention is focused on research and development in the area of mental retardation. Varied theories and experiences are provided as a means of fostering greater understanding of curriculum development, supervision, school administration, and the role of the school in our culture. The core of the preparation program in mental retardation centers around providing skills in the diagnostic/prescriptive area. With previous certification in mental retardation, the program will require approximately one year of full-time study for completion. The program may be modified for community service professionals who desire advanced study.

The graduate program in learning disabilities has been designed to develop and define the competencies of teachers for work with learning disabled students in resource and self-contained settings at all levels and in a variety of cultural environments. Professional skills emphasized in the basic program include the abilities to recognize educational and social problems in students with learning disabilities, to formulate effective individualized instructional programs using a variety of methodologies, and to consult productively with appropriate personnel in the development of maximum educational opportunities for learning disabled students. Concentrations within the master's degree program allow graduates to 1) develop in-depth knowledge of learning disabilities, 2) focus on the learning disabled adolescent, or 3) become skilled as educational diagnosticians. Endorsement in other areas may be initiated or completed with careful advisement and planning. For details see the M.Ed. program in special education-learning disabilities which follows.

The master's degree program in behavior disorders is designed to provide teachers the professional competencies needed to work in resource or crisis rooms, self-contained classrooms, or residential settings. In developing these competencies, the program focuses on specific teaching strategies used in the diagnosis and remediation of behavior and learning problems associated with the emotionally disturbed. Additionally, the program endeavors to develop skills in promoting positive parental and professional interactions. An innovative field-based component is available to selected full-time graduate students including extensive externship experiences with pupils in a continuum of special education settings. Work in the field-based component is provided through courses which integrate the students' daily experiences with current research and theory.

The master's degree program in early childhood handicapped is a sequentially planned series of courses and clinical experiences designed to equip experienced teachers and other professionals in related services with the necessary skills and knowledge to work effectively with young handicapped children and their parents. Requirements for endorsement include, in addition to specific course work, the Collegiate Professional Certificate and two years of successful experience with elementary or special education children.

M.Ed. PROGRAM IN ADMINISTRATION AND SUPERVISION

Administration Option	Credits
Foundations Core	9
EDU 606 Review of Research (Administration and Supervision)	3
EDU 609 Learning Strategies for the Classroom	3
EDU XXX (Cultural, Historical, Philosophical)	3
Program Core	27
ASE 600 Public School Administration	3
ASE 601 Supervision of Instruction	3
ASE 602 Seminar in Elementary School Administration	3
or	
ASE 603 Seminar in Secondary School Administration	3
ASE 610 School and Community Relations	3
ASE 611 School Law	3

ASE 640 Public School Finance	3
ASE 641 School Personnel Administration	3
EDU 615 Curriculum Development	3
EDU 700 Externship	3
Electives from Related Areas	3
(Select one of the following)	
EDU 502 Guidance	3
EDU 551 Survey of Special Education	3
EDU 648 Preparation of Instructional Materials	3
EDU 649 Educational Media: Theory and Practice	3
EDU 651 Topics: Organizational Development	3
BUS 633 Issues in Labor Relations	3
COE 603 Group Procedures	3
	39

Supervision Option	Credits
Foundations Core	9
EDU 606 Review of Research (Administration and Supervision)	3
EDU 609 Learning Strategies for the Classroom	3
EDU XXX (Cultural, Historical, Philosophical)	3
Program Core	18
ASE 600 Public School Administration	3
ASE 601 Supervision of Instruction	3
ASE 620 Evaluation of Instruction	3
EDU 615 Curriculum Development	3
EDU 651 Topics: Organizational Development	3
EDU 700 Externship	3
General Electives	12
(Select any four of the following)	
ASE 602 Seminar in Elementary School Administration	3
ASE 603 Seminar in Secondary School Administration	3
ASE 640 Public School Finance	3
ASE 641 School Personnel Administration	3
EDU 502 Guidance	3
EDU 504 Film as a Teaching Medium	3
EDU 507 Educational Media: Utilization	3
EDU 509 TV in the Classroom	3
EDU 534 Photography in Instruction	3
EDU 551 Survey of Special Education	3
EDU 648 Preparation of Instructional Materials	3
EDU 649 Educational Media: Theory and Practice	3
COE 603 Group Procedures	3

Dual Major Option—Administration and Supervision

Some administration and supervision majors may wish dual certification in supervision and administration. In such cases, these students must complete the basic foundations requirements and the following core courses:

	Credits
ASE 600 Public School Administration	3

ASE 601 Supervision of Instruction	3
ASE 602 Seminar in Elementary School Administration	3
or	
ASE 603 Seminar in Secondary School Administration	3
ASE 610 School and Community Relations	3
ASE 611 School Law	3
ASE 620 Evaluation of Instruction	3
ASE 640 Public School Finance	3
ASE 641 School Personnel Administration	3
EDU 615 Curriculum Development	3
EDU 651 Topics: Organizational Development	3
EDU 700 Externship	3

Vocational-Technical Education Option*Credits*

Foundations Core	9
EDU 606 Review of Research	3
EDU 609 Learning Strategies for the Classroom	3
EDU XXX (Cultural, Historical, Philosophical)	3
Program Core	33
ASE 610 School and Community Relations	3
EDU 615 Curriculum Development	3
OED 619 Organization and Administration of Occupational Education	3
ASE 600 Public School Administration	3
ASE 611 School Law	3
ASE 602 Seminar in Elementary School Administration or	3
ASE 603 Seminar in Secondary School Administration	3
ASE 601 Supervision of Instruction	3
ASE 601 Supervision of Instruction	3
OED 659 Trends in Occupational Education	3
OED 663 Management of Curriculum Development in Occupational Education	3-6
OED 665 Supervision in Occupational Education	3
EDU 700 Externship	3
	42-45

Supervisors may wish to seek dual certification as school librarians as well as supervisors. Alternatively, supervision students may wish to develop competence in instructional media. In addition to the foundations and four required supervision courses, students selecting either alternative must select 18-21 hours from the library/media courses available.

**Library/Media Option
(Certification)***Credits*

Foundations Core	9
EDU 606 Review of Research (Leadership)	3
EDU 609 Learning Strategies for the Classroom ..	3
EDU XXX (Cultural, Historical, Philosophical) ..	3

Program Core	33
EDU 615 Curriculum Development	3
ASE 600 Public School Administration	3
ASE 601 Supervision of Instruction	3
ASE 620 Evaluation of Instruction	3
'EDU 507 Educational Media: Utilization	3
'EDU 595 Reference and Bibliography	3
'EDU 596 Library Organization	3
'EDU 597 Cataloging and Classification	3
'EDU 672 Internship	3
EDU 528 Children's Literature	3
EDU 533 Adolescent Literature	3
	39-42

**Educational Media Option (Non-
certification)***Credits*

Foundations Core	9
EDU 606 Review of Research (Leadership)	3
EDU 609 Learning Strategies for the Classroom ..	3
EDU XXX (Cultural, Historical, Philosophical) ..	3
Program Core	30
EDU 615 Curriculum Development	3
ASE 600 Public School Administration	3
ASE 601 Supervision of Instruction	3
ASE 620 Evaluation of Instruction for Supervisors ..	3
EDU 507 Educational Media: Utilization	3
EDU 509 TV in the Classroom	3
EDU 534 Photography in Instruction	3
EDU 648 Preparation of Instructional Materials ..	3
EDU 649 Educational Media: Theory and Practice ..	3
EDU 651 Topics: Media Center Development ..	3
	39

M.ED. PROGRAM IN COUNSELOR EDUCATION*Credits*

Foundations Core	9
Program Core	24-27
EDU 502 Introduction to Guidance	3
COE 601 Theories of Counseling	3
COE 602 Practicum Techniques of Counseling ..	3
COE 603 Group Procedures in Counseling	3
COE 604 Practicum: Group Procedures in Counseling	3
COE 605 Career Information and Exploration ..	3
COE 606 Assessment Techniques for Counselors ..	3
EDU 700 Externship	3
COE 610 Guidance in the Elementary School ..	3
COE 611 Guidance in the Middle School	3
General Electives	3-6
	39

M.ED. PROGRAM IN COUNSELOR EDUCATION**(Classroom Guidance Concentration)***Credits*

Foundations Core	9
Program Core	18
EDU 502 Introduction to Guidance	3
COE 601 Theories of Counseling	

or

EDU 514 Parent-Child Relations

or

'Required for Certification in School Library.

206 School of Education

An approved elective	3
COE 603 Group Procedures in Counseling	3
COE 605 Career Information and Exploration	3
EDU 662 Educational Measurement and Evaluation	3
COE 621 Guidance Seminar	3
General Electives	6
	33

M.ED. PROGRAM IN COUNSELOR EDUCATION

(Dual Certification: Counselor and Visiting Teacher)

	<i>Credits</i>
Foundations Core	9
Program Core	18-21
EDU 502 Introduction to Guidance	3
COE 601 Theories of Counseling	3
COE 603 Group Procedures in Counseling	3
COE 605 Career Information and Exploration	3
COE 606 Assessment Techniques for Counselors	3
EDU 700 Externship	3
COE 610 Guidance in the Elementary School	3
Visiting Teacher:	
Program Core	15
EDU 568 Psycho-Educational Diagnosis of Children	

or

LDS 600 Characteristics of the Learning Disabled	3
SLW 604 Fundamentals of Social Case Work	3
SLW 666 Social Work Practices in Communities and Organizations	3
SLW 717 Social Work Practice in School Settings	3
SLW 711 Dynamics of the Family	

or

SLW 718 Social Work Practice and Policy in Child Welfare	3
	42-45

M.ED PROGRAM IN SPECIAL EDUCATION—MENTAL RETARDATION

(Limited to students holding endorsement in mental retardation)

	<i>Credits</i>
Foundations Core	9
Program Core	21
MRT 600 Language Development of Severely Handicapped Children	3
MRT 601 Curriculum Design for the Mentally Retarded	3
ASE 623 Administration and Supervision of Special Education	3
EDU 700 Externship	6
EDU 701 Thesis or two approved courses	6
Restricted Electives from Related Areas	6
	36

M.ED. PROGRAM IN SPECIAL EDUCATION—LEARNING DISABILITIES

	<i>Credits</i>
Foundations Core	9
(Must include PSY 607 Advanced Educational Psychology)	

Basic Specialization Core	18
EDU 551 Introduction to Special Education	3
EDU 568 Psycho-Educational Diagnosis	3
LDS 600 Characteristics of the Learning Disabled	3
LDS 601 Methods of Clinical Teaching	3
EDU 700 Externship; Learning Disabilities	6
Related Areas Core (Select two courses from a restricted list, with advisement)	6
Concentration Core'	6-12
Intensive Learning Disabilities Concentration (Select two courses with advisement)	6
Educational Diagnostician Concentration	12
LDS 620 Advanced Educational Diagnosis of Developmental Processes	3
LDS 621 Advanced Educational Diagnosis of Learning Problems	3
EDU 700 Externship: Educational Diagnostician (Restricted Elective)	3
Adolescent Learning Disabilities Concentration	6
LDS 611 Teaching the Learning Disabled Adolescent	3
(Restricted Elective)	3

39-45

M.ED. PROGRAM IN SPECIAL EDUCATION—BEHAVIOR DISORDERS (Emotionally Disturbed)

	<i>Credits</i>
Foundations Core	9
Program Core	33
'EDU 551 Introduction to Special Education	3
'EDU 568 Psychoeducational Diagnosis	3
EMO 600 Characteristics of the Behavior Disordered	3
EMO 601 Teaching the Behavior Disordered	3
EMO 602 Classroom Management of the Behavior Disordered	3
EMO 603 Human Interaction in Teaching	3
'EDU 566 Remedial Reading	3
EDU 700 Externship: Behavior Disorders	6
EDU 701 Thesis or two approved electives	6
(Students who elect the thesis must complete EDU 660 Methods of Research as a foundations course; students who do not do a thesis must complete EDU 606 Review of Research.)	

42

M.ED. IN EARLY CHILDHOOD HANDICAPPED

	<i>Credits</i>
Foundations Core	9
Program Core	30
Specific Endorsement Requirements	
EDU 551 Introduction to Special Education	3
or	
EDU 541 Young Children With Special Needs	
ECH 601 Assessment of Young Handicapped Children	3
MRT 610 Teaching Strategies for the Severely Handicapped	3
EDU 603 Seminar in Child Growth and	

'May be waived if equivalent taken at undergraduate level.

Development (completed as a foundations course)	
ECH 602 Instructional Program for Preschool Handicapped Children	3
EDU 542 Parent-Professional Partnership	3
ECH 603 Case and Program Management for Teachers for the Preschool Handicapped	3
EDU 700 Externship	6
EDU 701 Thesis or two courses at the 600 level or above	6
Electives from Related Areas	
EDU 538 Orientation to Speech and Language Disorders	3
EDU 558 Characteristics of the Physically Handicapped	3
EDU 570 Medical Aspects of Crippling Conditions	3
EDU 575 Cross Cultural Communication	3
EDU 578 Creative Rhythmic Movement	3
EEL 622 Programs in Early Childhood	3
EDU 648 Preparation of Instructional Materials	3
MRT 600 Language Development in the Severely Handicapped	3
	39

Division of Educational Studies—Adult Education, Vocational-Technical Education

FACULTY

- Bailey, James W. *Professor* M.Ed., University of Chicago; human development and learning, human sexuality education.
- Caffarella, Rosemary S. *Associate Professor and Division Head* Ph.D., Michigan State University; adult education, adult development, and program planning.
- Craver, Samuel M. *Associate Professor* Ph.D., University of North Carolina; history and philosophy of education.
- Ely, Vivien K. *Professor* Ed.D., North Carolina State University; curriculum and instruction in occupational education.
- Hephner, Thomas A. *Associate Professor* Ph.D., Ohio State University; vocational education and curriculum and instruction.
- Jacobs, Brian C. *Associate Professor* Ph.D., University of Minnesota; vocational education and distributive education.
- Lavery, John W. *Associate Professor* Ed.D., Michigan State University; human resource development, adult education and community college.
- Linder, Fredric I. *Assistant Professor* Ph.D., State University of New York at Buffalo; human development and learning, research evaluation.
- Londoner, Carroll A. *Associate Professor* Ph.D., Indiana University; adult learning and human resource development.
- McMillan, James H. *Assistant Professor* Ph.D., Northwestern University; research methods, social psychology of education.
- Ozmon, Howard A. *Professor* Ed.D., Columbia University; philosophy of education, educational futures.

Park, Mary Lou *Assistant Professor* M.S., State University of New York; health occupations education, administration and supervision.

Ramey, Walter S. *Assistant Professor* Advanced Certificate (Degree), University of Illinois; vocational/technical education administration.

Schumacher, Sally A. *Associate Professor* Ph.D., Washington University; educational and policy research and evaluation, curriculum and program evaluation.

Sherron, Ronald H. *Professor* Ph.D., University of North Carolina; adult learning, program evaluation.

Strandberg, Warren D. *Professor* Ph.D., Northwestern University; philosophy of education, cultural foundations of education.

Business Education faculty participating in the Occupational Education degree:

Ackley, Robert J. *Assistant Professor* Ed.D., Utah State University; business education and office administration.

Jackson, J. Howard *Professor and Chairman* Ph.D., Ohio State University; business education and office administration.

Johnston, Iris W. *Assistant Professor* Ed.D., Virginia Polytechnic Institute and State University; business education and office administration.

Pearce, C. Glenn *Associate Professor* Ph.D., Georgia State University; business education and office administration.

Spring, Marietta *Assistant Professor* Ed.D., Virginia Polytechnic Institute and State University; business education and office administration.

Tucker, Woodie L. *Professor* Ph.D., University of Pittsburgh; business education and office administration.

This division offers two graduate programs leading to a Master of Education degree. The Master of Education degree is awarded in adult education and occupational education.

Generally, students entering one of the graduate programs in the division are required to possess an appropriate certificate for public school teaching. Students who do not hold the appropriate certificate must complete all certification requirements through program planning of their graduate work. It is possible to take program courses and to engage in program experiences at the graduate level which meet both degree and certification requirements. Under such circumstances, graduate students may take additional undergraduate or graduate work for certification while pursuing the graduate degree program.

Adult Education

The adult education program is designed to provide professional growth experiences

that will increase the skills and understanding needed to plan, implement, manage, and evaluate educational programs for adults. Opportunities exist to design individual programs of study with emphasis in the following areas: adult literacy training, continuing education, community college education, occupational training, health sciences, allied health services, human resource development, religious education, correctional institution education, educational gerontology, and educational media. For more information, contact Dr. Ronald Sherron, (804) 257-1332.

M.ED. PROGRAM IN ADULT EDUCATION

	<i>Credits</i>
Foundations Core	9
Program Core	15
ADE 600 Adult Education Movement	3
ADE 601 The Adult Learner	3
ADE 602 Instructional Strategies for Adults....	3
ADE 603 Adult Program Management and Evaluation	3
ADE 604 Adult Education Seminar	3
*Electives	12-15
	36-39

*Suggested Electives Cluster Options—Other electives are also available based on student's individual career goals.

Administration—Public Systems

	<i>Credits</i>
ASE 601 Supervision of Instruction	3
EDU 645 Public Relations Principles	3
BUS 641 Organizational Theory	3
BUS 643 Administration Systems	3

Community College Education

ADE 612 Community College Organization and Administration	3
ADE 613 Community College Instructional Staff Development and Supervision	3
ADE 611 The Community College Student	3
ADE 615 Legal and Fiscal Aspects of Community College Education	3
ADE 610 The Community College, Its History and Development	3
ASE 643 The Community School	3

Criminal Justice

PSY 508 Forensic Psychology	3
PSY 616 Psychopathology	3
SOC 612 Seminar in the Sociology of Deviant Behavior	3
SOC 620 Seminar in Criminology	3
SLW 670 Social Justice and Ethnic Diversity	3

Human Resource Development

ADE 620 Human Resource Development: Training Function in Organizations	3
ADE 622 Designing Human Resource Development Programs	3
ADE 621 Skills Development for HRD Trainer	3
EDU 651 Human Resources Seminar	3

Media

EDU 507 Educational Media	3
EDU 509 TV in the Classroom	3
EDU 648 Preparation of Instructional Materials	3
EDU 649 Educational Media: Theory and Practice	3
EDU 700 Externship	3

Occupational Education

OED 501 Occupational Education Adult Programs	3
OED 546 Competency-Based Methods in Occupational Education	3
OED 659 Trends in Occupational Education	3
OED 663 Management of Curriculum Development in Occupational Education	3

Research

EDU 606 Review of Research	3
EDU 651 Computer Literacy	3
EDU 661 Educational Evaluation: Models and Designs	3
EDU 662 Educational Measurement and Evaluation	3

Special Education

MRT 556 Characteristics of the Mentally Retarded	3
EMO 600 Characteristics of the Behavior Disordered	3
MRT 570 Medical Aspects of Crippling Conditions	3
EDU 566 Remedial Reading	3

Student Personnel Services

COE 601 Theories of Counseling	3
ASE 642 Organization and Administration of Guidance Services	3
COE 605 Career Information and Career Exploration	3
COE 606 Assessment Techniques for Counselors	3

Teaching—General Adult

EMO 603 Human Interaction in Teaching	3
EDU 613 Educational Change	3
EDU 615 Curriculum Development	3
EEL 604 Curriculum Seminar	3
PSY 621 Seminar in Motivation	3
EDU 600 Organizing Effective Classroom Instruction	3

Teaching—Adult Basic Education

EDU 566 Remedial Reading	3
EMO 603 Human Interaction in Teaching.	3
EEL 600 Curriculum Development	3
EEL 603 Designing Modular Instructional Packages	3
COE 606 Assessment Techniques for Counselors .	3
EDU 700 Externship	3

Occupational Education

The graduate program in occupational education is designed to prepare individuals for assuming leadership roles in the teaching or administration of Business Education, Health Occupations Education, Marketing Education, or Occupational Education Curriculum Development at the secondary or post-secondary levels.

**M.ED. PROGRAM IN OCCUPATIONAL
EDUCATION**

	<i>Credits</i>
Foundations Core	9
Program Core	15
Program Electives	15
	<u>39</u>

Foundations—9 credits, including one course in each of these areas: a) human development and learning; b) cultural, historical, and philosophical foundations of education; and c) educational research.

Program Core—15 credits, including the following courses:

OED 546 Competency-Based Teaching Methods in Occupational Education	3
OED 619 Organization and Administration of Occupational Education	3
OED 659 Trends in Occupational Education	3
OED 663 Management of Curriculum Develop- ment in Occupational Education	3
OED 665 Supervision in Occupational Education	3

Program Electives—15 credits, selected from approved courses which support the student's program area or level of occupational education. Elective courses must have advisor approval. Suggested electives include:

OED 500 Administration and Coordination of Occupational Education	3
OED 501 Occupational Education Adult Programs	3
OPE 600 Curriculum Development in Occupational Education	3
OED 601 Materials and Methods in Occupational Education	3
OED 604 Occupational Experience Seminar	3
EDU 560 Teaching the Disadvantaged	3
EDU 700 Externship	3
ECO 600 Concepts in Economics	3
BUS 611 Improvement of Instructions in Typewriting	3

BUS 612 Improvement of Instruction in Shorthand	3
BUS 613 Current Practices in Accounting and Data Processing Programs	3
BUS 614 Readings in Business Education	3
BUS 616 Advanced Office Administration	3
BUS 617 Current Practices in Basic Business Education	3
BUS 618 Trends in Business Education	3
BUS 652 Advanced Business Communication	3
BUS 654 Topics Seminar in Business Education and Office Administration	3
BUS 670 Concepts and Issues in Marketing	3
BUS 671 Marketing Management	3
BUS 672 Concepts in Consumer Behavior	3
BUS 673 Marketing Research	3
BUS 676 Marketing Strategy	3
HCM 500 Health and Medical Care Organizations	3
HCM 501 Aspects of Illness and Disabilities	3
HCM 502 Management in Health Care Facilities ..	3
AHP 573 Teaching in Health Professional Schools	3
AHP 582 Supervision in the Allied Health Professions	3

Educational Studies

The division also offers service courses at both the undergraduate and graduate levels to all existing programs in the School of Education. At the graduate level the division offers courses which fulfill the foundations requirements of all the master's degree programs. Educational studies include the following areas of concentration in education: the philosophical, psychological, historical, and cultural aspects of education, and educational research, evaluation, and measurement.

Graduate Courses in Educational Studies

EDU 601 Philosophy of Education
EDU 602 Adolescent Growth and Development
EDU 603 Seminar in Child Growth and Development
EDU 604 Urban Education
EDU 605 Psychology in the Schools
EDU 606 Review of Research
EDU 607 Social Foundations of Education
EDU 608 History of Western Education
EDU 609 Learning Strategies for the Classroom
EDU 612 Education and the World's Future
EDU 614 Contemporary Educational Thought
EDU 641 Independent Study
EDU 651 Topics in Education
EDU 660 Research Methods in Education
EDU 661 Educational Evaluation: Models and Designs
EDU 662 Educational Measurement and Evaluation

Division of Health and Physical Education

FACULTY

- Davis, Robert G. *Associate Professor* Ph.D., University of Maryland; elementary physical education.
- Dintiman, George B. *Professor* Ed.D., Columbia University; research methods: administration of health and physical education.
- DeMeersman, Ronald *Assistant Professor* Ph.D., Indiana University; exercise physiology, kinesiology.
- Groves, Barney *Associate Professor* Ph.D., Florida State University; fitness, intramural sports.
- Pennington, Jude C. *Assistant Professor* Ph.D., Florida State University; administration and supervision.
- Pratt, LeEtta *Assistant Professor* Ed.D., Oregon State University; health education, school health.
- Schiltz, Jack H. *Associate Professor* Ed.D., Columbia University; motor learning, aquatics.
- Stone, Stephen *Assistant Professor* Ph.D. Texas A and M University; health.

The graduate program in health and physical education seeks to provide an opportunity for students to achieve their potential as professionals. Specific goals of the department are to provide knowledge, application, and practical experiences which will improve teaching ability and enhance student attitude toward the education profession in general and physical education in particular. Students are encouraged to concentrate electives to develop specialization in the areas of elementary physical education, secondary/college physical education, movement sciences, athletic care and training, health, or administration and supervision. (This leads to certification as either a principal or supervisor.)

The Master of Science degree in physical education assumes that applicants hold state certification; however, students who plan to enter the teaching profession may obtain certification in health and physical education (K-12) while pursuing a graduate degree in physical education.

	<i>Credits</i>
Foundations Core	9
Human development, learning, cultural, historical, and philosophical courses	6
PHE 602 Development of Research Techniques . .	3
Program Core	9
PHE 600 Seminar in Motor Learning Performance	3
PHE 601 Movement Physiology	3
EDU 681 Investigations and Trends in Teaching .	3
Concentrations	6
Elementary:	

PHE 612 Administration and Supervision of Physical Education	3
PHE 500 Motor Development of Young Children. Secondary:	3
PHE 611 Mechanical Analysis of Human Motion .	3
EDU 599 Administration and Supervision of Physical Education	3
Movement Sciences—exercise physiology:	
PHE 610 Exercise Physiology: Instrumentation and Techniques	3
PHE 611 Mechanical Analysis of Human Motion .	3
Movement Sciences—motor learning:	3
(Two courses selected from approximately 10 offerings)	
Administration and Supervision:	
(Joint 36-credit program with the Department of Educational Services leading to Virginia certification as a principal or supervisor)	
Athletic Care and Training:	
PHE 521 Athletic Care and Training	3
PHE 621 Sports Medicine	3
Health:	
HEN 500 Teaching Health in the Public Schools .	3
EDU 594 Topics in Health Education	3
Electives	9
EDU 641 Directed Independent Study	3
EDU 701 Thesis	6
Elective #1	3
Elective #2	3

33

Division of Teacher Education

FACULTY

- Baker, Stanley E. *Associate Professor* Ed.D., Teachers College, Columbia University; student/teacher interaction during reading instruction, reading habits and attitudes of reading teachers.
- Boraks, Nancy *Associate Professor* Ph.D., University of Colorado; peer impact on learning, ethnographic study of adult learning.
- Brittain, Mary M. *Assistant Professor* Ph.D., University of Miami; psycholinguistics of reading, assessment of reading achievement.
- Busby, Doris W. *Associate Professor* Ed.D., University of Illinois; cognition and learning styles of young children, formation of values and attitudes among young minority children.
- Davis, Michael D. *Associate Professor* Ph.D., University of Illinois; development of student teachers, issues in teacher education.
- Duncan, Patricia H. *Associate Professor* Ed.D., University of Georgia; research in written composition in the elementary grades, perceptual factors and reading.
- Fulton, Joan L. *Associate Professor* Ed.D., University of Virginia; effects of instructional strategies on intellectual development, theoretical model in instructional method of concept construction.
- Goggin, William F. *Associate Professor* Ed.D., University of Virginia; teaching writing.
- Gross, Ena *Assistant Professor* Ph.D., Georgia State University; the use of hand-held calculators in learning mathematics—grades 3-8, the teaching and

evaluating of mathematical problem-solving.

Hodges, James O. *Associate Professor* Ph.D., University of Colorado; interdisciplinary cooperation in social science education, teaching strategies and techniques in social studies evaluation.

Lohr, Michael C. *Associate Professor* Ed.D., University of Virginia; activities in the teaching of secondary mathematics, learning theory in the teaching of mathematics.

McLeod, Alan M. *Professor* Ed.D., University of Virginia; adolescent literature (teaching literature), teaching writing.

Oehler, John S. *Associate Professor and Acting Assistant Dean* Ed.D., University of North Carolina; staff development, curriculum and instruction.

Pieper, Alice M. *Associate Professor* Ph.D., University of Maryland; parenting, early childhood assessment.

Reed, Daisy F. *Assistant Professor* Ed.D., Teachers College, Columbia University; classroom management, mainstreaming.

Rezba, Richard J. *Associate Professor* Ph.D., Indiana University; reading in the content areas of math and science, consequence evaluation measures.

Richardson, Judy S. *Assistant Professor* Ph.D., University of North Carolina; reading in content areas, remedial and beginning secondary and adult readers.

Swyers, William *Associate Professor* Ed.D., University of Georgia; middle school curriculum

Tarter, Martin A. *Associate Professor* Ed.D., University of Virginia; photography and teaching of the social studies and the humanities (visual literacy and heightened awareness), economic education and dealing with controversial issues.

Van de Walle, John *Associate Professor* Ph.D., Ohio State University; concept development in early childhood mathematics, instructional strategies for elementary school mathematics—problem-solving and computation.

Zaret, Esther, *Professor* Ph.D., University of Wisconsin; curriculum theory, openness in teaching.

The Division of Teacher Education offers graduate work leading to four degree programs: M.Ed. in curriculum and instruction; M.Ed. in mathematics education; M.Ed. in reading; and M.A. in English/English education. In some programs students may meet both degree and certification requirements by completing the approved graduate program sequence with additional graduate or undergraduate work, as planned with a program advisor.

M.ED. IN CURRICULUM AND INSTRUCTION

The Master of Education in curriculum and instruction is a program designed to provide professional and cognate experiences for students wishing to become master teach-

ers. Teachers and prospective teachers may select to work at one of three levels: early education, middle education or secondary education. Content courses within the program may be selected with a discipline focus. A student who seeks initial endorsement to teach may need to take additional work at the undergraduate level.

	<i>Credits</i>
Foundations.	9
Program Core	
Process level:	
EDU 615 Curriculum Development	3
EDU 617 Instructional Models	3
Content level	15
Elective	3
Externship	3
	36

M.A. IN ENGLISH/ENGLISH EDUCATION

For information on the master's degree in English/English Education, see Interdisciplinary and Cooperatively Offered Graduate Degrees.

M.ED. IN MATHEMATICS EDUCATION

The mathematics education degree program is offered in conjunction with the Department of Mathematical Sciences in College of Humanities and Sciences. Students may enroll who are, or wish to become, middle school, secondary school, or community college teachers of mathematics.

The program provides experienced secondary school teachers of mathematics opportunities to extend their mathematical and teaching skills. It also affords those persons who have completed a baccalaureate degree in mathematics an opportunity to pursue professional education studies. The program allows for extended study in the areas of mathematics, statistics, computer science, and professional education.

Program requirements differ for each student, since they are determined by educational background and future aspirations. A sample degree program for students in mathematics education is listed below.

SAMPLE M.ED. PROGRAM IN MATHEMATICS EDUCATION

	<i>Credits</i>
Foundations Core.	9

Program Core.	18
MAT 507-508 Analysis I and II.	6
MAT 511 Applied Linear Algebra.	3
MAT 521 Number Theory.	3
EDU 681 Investigation and Trends in Teaching.	3
Electives.	6
	33

M.ED. IN READING

The Master of Education in reading is designed to provide prospective reading specialists with a program of sequential and integrated experiences in areas of the reading curriculum ranging from preschool to adult levels. Students will gain an understanding of the developmental and diagnostic processes involved in teaching reading and will become familiar with the resource and supervisory functions which are part of the specialist role. The M.Ed. in reading is an approved certification program (K–12) for students who meet Virginia State Department of Education requirements.

A cooperative agreement has been established with Virginia State University to permit selected, qualified students to complete the M.Ed. in reading. Up to 12 semester hours from an approved list may be transferred from the cooperating institution. Interested students should contact the Division of Teacher Education.

M.Ed. in Reading

	<i>Credits</i>
Foundations.	9
Program Core.	18
EDU 561 Reading Foundations.	3
REA 600 Analysis & Correction of Reading Problems.	3
(Prerequisite: EDU 561 or EDU 549)	
EDU 672 Internship in Reading.	3
(Prerequisite: REA 600)	
REA 604 Reading Instruction in the Content Areas.	3
EDU 700 Externship in Reading.	3
(Prerequisite: REA 600, EDU 672)	
Reading Elective.	
Select from: EDU 525 Language Arts in the Elementary School	
REA 601 Psycholinguistics and the Language Arts Curriculum	
REA 602 Teaching Adults to Read	
REA 603 Dynamics of Reading Readiness	
EDU 606 Review of Research in Reading	
EDU 549 Developmental Reading in the Secondary School	

Program candidates shall have completed at the graduate or undergraduate level 12 semester hours selected from the following areas:

Measurement and Evaluation
Child/Adolescent psychology
Psychology of Personality, Cognition
or Learning Child/Adolescent Literature
Language Arts Instruction
Learning Disabilities
Study of Contemporary Issues and Trends in the Teaching of Reading
General electives to complete the program _____

36

GRADUATE COURSES IN EDUCATION (EDU)

500 Workshop in Education. Semester course; 1-3 credit hours repeatable to 6 credit hours. Designed to focus on a single topic within a curriculum area, the workshop offers graduate students exposure to new information strategies and materials in the context of a flexible instructional framework. Activities emphasize a “hands-on” approach with direct application to the educational setting.

501 Working with the Student Teacher. 1-3 credits. A focus on the role of the cooperating teacher during the student teaching experience. Overview of techniques for working with student teachers and evaluating student teacher performance.

502 Introduction to Guidance. Semester course; 3 lecture hours. 3 credits. An introductory course for all students in counselor education. The course is designed for both elementary and secondary counselors and is a prerequisite to all other courses offered by the department of counselor education. It includes a survey of pupil personnel services and places special emphasis on those services associated with the guidance program.

503 Guidance for Exceptional Children. Semester course; 3 lecture hours. 3 credits. An introduction to guidance strategies for assisting exceptional children. Special attention is given to the interrelationships of home, school, and community resources.

504 Film as a Teaching Resource. Semester course; 3 lecture hours. 3 credits. Exploring the film as a teaching resource. The course is designed to familiarize the students with thought-provoking films. Over 50 films will be presented. Especially helpful for the English teacher will be the exploration of the relationship between film and fiction. The humanities teacher will find a repertory of films on topics relating to historical and social questions useful.

507 Survey of Educational Media. Semester course; 3 lecture hours. 3 credits. Introduces the role of educational media and technology in the instructional process. Emphasizes the systematic design of instruction and the selection, evaluation, and utilization of media. Basic production skills and equipment operation are developed within a framework of designing appropriate learning activities.

509 TV in the Classroom. Semester course; 3 lecture hours. 3-6 credits. Video taped teaching-learning materials for specified learner outcomes will be designed and produced. Educational broadcasting and the use of commercial broadcast programs will be examined.

514 Parent-Child Relations. Semester course; 3 lecture hours. 3 credits. A methods course in parent-child communications and problem solving. Designed to enable parents and professionals to understand and relate more effectively with children.

517 Science Education in the Elementary School. Semester course; 3 lecture hours. 3 credits. A course designed to renew and/or expand teachers' knowledge and skills in the teaching of science in the classroom and the community. New materials and methodologies will be examined in the light of current trends, research findings and professional recommendations.

522 Mathematics Education in the Elementary School. Semester course; 3 lecture hours. 3 credits. A course designed to renew and/or expand classroom teacher's knowledge and skills in the teaching of mathematics. New materials and methodologies will be examined in the light of current trends, research findings, and professional recommendations.

525 Language Arts in Elementary School. Semester course; 3 lecture hours. 3 credits. Teaching techniques and materials for the developmental teaching of communication skills. Students will explore significant research and current literature related to content, organization, and instruction in language arts for the elementary school.

528 Children's Literature II. Semester course; 3 lecture hours. 3 credits. A study of classic and current children's books, from a variety of literary genre. Magazines and media-related reference resources and journals are reviewed. The creative use of literature, its socio-cultural functions, and its contribution to the development of the oral and written expression of children from nursery to grade eight are explored. A focus on children with special problems is included.

529 Movement Education. Semester course; 3 lecture hours. 3 credits. For teachers of early childhood and elementary education. Emphasis given to the role of movement in the educational program, and movement theory and its applications for curriculum and learning. Major consideration will be given to motor development in young children and its implications for positive self-concepts.

531 Creative Teaching in the Elementary School. Semester course; 3 lecture hours. 3 credits. Designed for early childhood and elementary teachers and administrators. Diversified experiences drawn from various curriculum areas, including the arts. Focus on the creative process and the role of the teacher in fostering creativity.

534 Photography in Instruction. Semester course; 3 lecture hours. 3 credits. Skills with cameras, films, papers, and other photographic equipment and materials. The use of these materials as tools for teaching and the skills for preparation of instructional resources will be discussed and practiced.

535 Problems of Social Studies Instruction. Semester course; 3-6 credits. Prerequisite: permission of instructor and appropriate teaching experience. An in-depth investigation into the nature of and alternatives to problems encountered by students while teaching. Developing and evaluating instructional alternatives will be stressed.

538 Orientation to Speech and Language Disorders. Semester course; 3 lecture hours. 3 credits. An introduction to the history, scope, and trends in the field of speech pathology to include terminology, systems of classifications, and concepts of etiology, diagnosis, and therapy.

541 Young Children with Special Needs. Semester course; 3 lecture hours. 3 credits. An overview of the nature and needs of young children with special needs, the rationale for early intervention, and available resources. This is a course for teachers and personnel in health professions and other related fields.

542 Parent/Professional Partnership. Semester course; 3 lecture hours. 3 credits. A course to provide theory and practice relevant to helping parents and other family members work with their handicapped child. This course will address the need to provide supportive counseling services, necessary community resources information, and specific training techniques for families with handicapped individuals. The legal rights of parents and their handicapped child will also be emphasized.

543 Teaching High School Foreign Language. Semester course; 3 lecture hours. 3 credits. To provide insight into effective secondary school foreign language instruction and to afford opportunities to the participants to upgrade their foreign language skills in listening comprehension and speaking. Attention will be given to materials, methods, and techniques. Time will be available to observe an experienced teacher using the methods and techniques taught.

544 Introduction to the Middle School. Semester course; 3 lecture hours. 3 credits. An examination of the nature and capabilities of the middle school student, the school environment, teacher characteristics, instructional modes, the curriculum, and the future of the middle school movement.

549 Development Reading in the Secondary School. Semester course; 3 lecture hours. 3 credits. For prospective and practicing secondary school teachers. The course explores theoretical concepts in learning and reading, and the translation of these concepts into specific teaching procedures for students in the secondary school.

550 Foreign Language Performance and Program Evaluation. Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. Assessing student's listening, speaking, reading, and writing skills and knowledge of culture. Evaluating the effectiveness of the school's foreign language programs and instruction.

551 Introduction to Special Education. Semester course; 3 lecture hours. 3 credits. Initial graduate offering for special education majors. Includes review and discussion of all handicapping conditions. Analysis of major issues in special education such as least restrictive environment, labeling, nondiscriminatory testing, and impact of legislation and court cases on the field.

552/ENG 552 Teaching English as a Foreign Language. Semester course; 3 lecture hours. 3 credits. To provide students who plan to teach English to people whose native language is not English with the techniques used in

teaching foreign languages. Contrastive analysis of morphology, phonology, and syntax is used to isolate areas of difficulty in learning English.

554/MAT 554 Applications of Computers in the Teaching of Mathematics. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: college calculus course or permission of instructor. Introduction to computers and programming using the language, BASIC. Applications of the computer in algebra, geometry, trigonometry, statistics, and calculus.

555 Geography in Social Studies Curriculum. Semester course; 3 lecture hours. 3 credits. A survey of geographic concepts and processes as a basis for examining curricular projects for and developing instructional approaches to geography as part of the social studies curriculum.

558 Introduction to Physically Handicapped. Semester course; 3 lecture hours. 3 credits. Graduate elective for special education majors. Review of a variety of physically handicapping conditions. Analysis of major issues such as architectural engineering, equipment adaptations and modifications, and new advances in treatment and prevention.

560 Teaching the Disadvantaged. Semester course; 3 lecture hours. 3 credits. Exploration of the nature and needs of disadvantaged children with emphasis on implication for teaching.

561 Reading Foundations: Sociological/Psychological Perspectives. Semester course; 3 lecture hours. 3 credits. The purpose of this course is to provide a basic understanding of the theories, processes, and methodologies of reading instruction. Multidisciplinary, multi-cultural aspects of reading instruction are stressed. Topics of particular importance to the classroom teacher are emphasized.

564 Teaching the Gifted. Semester course; 3 lecture hours. 3 credits. Curriculum development and organization of activities for the gifted at different maturational levels with specific attention given to program content, materials, resources, and guidance.

566 Remedial Reading. Semester course; 3 lecture hours. 3 credits. Prerequisite: reading foundations course or permission of instructor. A study of reading problems. This course focuses on reading and diagnosis and corrections as it relates to classroom and clinic. Students learn appropriate diagnostic procedures, administration and interpretation of reading diagnostic tests, and correctional techniques for children with reading difficulties. Evaluating and tutoring of individuals with reading difficulties is a course component.

568 Psycho-Educational Diagnosis of Children. Semester course; 3 lecture hours. 3 credits. An examination of standardized tests and informal techniques and their application in educational settings. Skills needed for administration, interpretation, and application of such techniques in the development and understanding of individualized educational programs (IEPs) are developed.

569 Diagnosis and Remediation in Mathematics. Semester course; 3 lecture hours. 3 credits. For classroom and resource teachers working with children whose arith-

metic achievement is significantly lower than grade-level placement or expectancy level; designed to attack learning problems in arithmetic at the child's level and to aid teachers in the sequential development of skills and concepts.

571 Education of Self. Semester course; 3 lecture hours. 3 credits. An exploration in a group setting of personal concerns of identity, relationship, and power. Participants are assisted in identifying their concerns, discovering their patterns of emotional and behavioral responses, examining the consequences of these patterns, and generating and "trying on" alternative behaviors, thus examining awareness of strategies for learning about self and others. The course provides preparatory training for small group leadership and/or teaching, utilizing humanistic education constructs, techniques, and procedures.

573 Introduction to Learning Disabilities. Semester course; 3 lecture hours. 3 credits. An overview of the learning disabled student within the educational setting through readings, discussion, simulations, and guided field experiences. Recommended for teachers and other personnel who seek the understanding and skills to cope with learning problems in their own setting. Not for program majors or endorsement.

575 Cross-Cultural Communications. Semester course; 3 lecture hours. 3 credits. An experimentally-oriented seminar for persons preparing for or in careers demanding close working relations with numbers of differing cultural-ethnic backgrounds, primarily white/black. Supported by out-of-class readings and exercises, the seminar will focus on attitudes, opinions, and self-perceptions operative within the seminar and on relating these to race relations problems and change strategies within the larger society.

578 Creative Rhythmic Movement. Semester course; 3 lecture hours. 3 credits. A study of the importance and place of movement and music in a school program, and the uses of these media in teaching. Emphasis will be placed upon music as an accompaniment for movement and movement as an accompaniment for music. Attention will be given to analysis, improvisation, and creativity.

591 Social Studies Education in the Elementary School. Semester course; 3 lecture hours. 3 credits. A course designed to renew and/or expand the knowledge and skills of the classroom teacher in the teaching of social studies. Curriculum emphasis on the development of knowledge, skills, values, and attitudes will be examined in the light of professional recommendations, current trends, and research findings.

594 Topical Seminar. Semester course; 1-3 variable credits repeatable up to 6 credits. A seminar intended for group study by students interested in examining topics, issues, or problems related to teaching and learning.

595 Reference and Bibliography. Semester course; 3 lecture hours. 3 credits. A study and evaluation of basic reference books and other bibliographical material most frequently used to answer reference questions in a library, including applications of computer technology.

596 Library Organization and Administration. Semester course; 3 lecture hours. 3 credits. A study of fundamen-

tal methods, routines, and procedures in the acquisition, preparation, and circulation of books and other materials for libraries. Special emphasis is on the school library.

597 Cataloging and Classification. Semester course; 3 lecture hours. 3 credits. A basic course in cataloging and classifying library materials. Practice is given in using classification systems, subject headings, filing rules, and the use and adaptation of printed cards and cataloging aids.

598 Media Center Development. Semester course; 3 lecture hours. 3 credits. No prerequisites. The development and operation of a comprehensive library/media center require a broad range of professional skills. This course will provide library/media professionals with knowledge and practice in the design and evaluation of media facilities and an understanding of the specific administrative and supervisory skills needed to operate a comprehensive library/media center.

599 Administration and Supervision of Physical Education. Semester course; 3 lecture hours. 3 credits. Guides for administrative and supervision policies and problems in physical education. Observation techniques, standards for judging instruction, the supervisory conference, cooperative supervision. Emphasis placed upon the common problems met by administrators and supervisors.

600 Organizing for Effective Classroom Instruction. Semester course; 3 lecture hours. 3 credits. Designed to assist teachers in becoming effective classroom organizers. Emphasis on the theory and application of instructional planning, behavior control, classroom environment, instructional materials, and teaching models. (For elementary and secondary teachers.)

601 Philosophy of Education. Semester course; 3 lecture hours. 3 credits. A study of basic philosophies which have contributed to the present-day educational system. Attention will be given to contemporary philosophies and their impact on educational aims and methods.

602 Adolescent Growth and Development. Semester course; 3 lecture hours. 3 credits. Contemporary learning theories and their implications for teaching the adolescent learner. Emphasis will be placed on specific problems of adolescent growth and development as they relate to the learning situation.

603 Seminar in Child Growth and Development. Semester course; 3 lecture hours. 3 credits. Intensive study of child growth and development and application of this knowledge. Emphasis on current research.

605 Psychology in the Schools. Semester course; 3 lecture hours. 3 credits. To provide knowledge and application of psychological principles to school settings. Includes learning, development, measurement, and evaluation as related to pupil learning, teacher behavior, counselors, and other school personnel.

606 Review of Research. Semester course; 3 credits, repeatable to nine credits. Application of research findings to a specific educational area of study. Emphasis is on the consumption and utilization of research findings rather than the production of research evidence.

607 Social Foundations of Education. Semester course; 3 lecture hours. 3 credits. A study of significant social issues involved in the development and operation of schools and other educational institutions and processes.

608 History of Western Education. Semester course; 3 lecture hours. 3 credits. This course will explore the development of educational thought and practice from ancient times to the present, with special attention being given to the major issues confronting American education since its beginning.

609 Learning Strategies for the Classroom. Semester course; 3 lecture hours. 3 credits. A study of learning strategies used in classrooms including examination of concepts and issues related to the teaching-learning process. Materials and curriculum will be discussed in relation to principles of learning.

612 Education and the World's Future. Semester course; 3 lecture hours. 3 credits. An examination of education as it relates to future changes in other areas: population, energy, transportation, family, etc. The course will consist of readings dealing with educational change as well as a series of modules where students will engage in future exercises, games, and projects.

613 Educational Change. Semester course; 3 lecture hours. 3 credits. Developing the skills for planned program change through the use of systematic inquiry, systems analysis, and systems approaches through systems concepts. Provides opportunities for students to develop "mini (classroom) changes" or "macro (school district) changes" through the use of systems.

614 Contemporary Educational Thought. Semester course; 3 lecture hours. 3 credits. This course will be devoted to a critical examination of educational ideas and programs emanating from contemporary writings on education. Students will be encouraged to develop critical skills of analysis in examining such writings utilizing historical and philosophical perspectives.

615 Curriculum Development. Semester course; 3 lecture hours. 3 credits. A basic graduate course in curriculum development. Curriculum decision-making is examined in relation to foundation areas, content areas and current educational trends. Various conceptions of curriculum are explored.

617 Instructional Models. Semester course; 3 lecture hours. 3 credits. An examination of instructional models with a focus on their analysis and adaptation to learning environments and school curriculum.

618 Curriculum Construction. Semester course; 3-6 lecture hours. 3-6 credits. A study of curriculum problems with special attention given to the organization and preparation of teaching units. The course is individualized to meet student needs and nature of study.

620 Designing Modular Instructional Packages. Semester course; 3 lecture hours. 3 credits. A study of the theory underlying simulation and instructional packages. Modular instructional packages will be developed with emphasis on their proper use as an instructional strategy.

621 Curriculum Seminar. Semester course; 3 lecture

hours. 3 credits. A study of curriculum theory, research, and practice for advanced students. The seminar is an opportunity for students to integrate previous course work and professional experiences in curriculum.

641 Independent Study. Semester course; 1-6 credits, repeatable to nine credits. An individual study of a specialized issue or problem in education. Determination of the amount of credit and permission of the instructor and department chairman must be procured prior to registration. Cannot be used in place of existing courses.

648 Preparation of Instructional Materials. Semester course; 3 lecture hours. 3 credits. Prerequisite: EDU 407/507 or permission of instructor. Development of materials for the classroom with an emphasis on determining medium, designing the message, producing the material, and evaluating the effect. The design of these materials will be predicated on the learning modes and instructional styles.

649 Educational Media: Theory and Practice. Semester course; 3 lecture hours. 3 credits. Prerequisite: EDU 407/507 or permission of instructor. An analysis of educational media with emphasis on the use of media in instructional design and development of teaching strategies.

650 Instructional Television. Semester course; 3 lecture hours. 3 credits. Prerequisite: EDU 509 or permission of instructor. Use of instructional design and production skills to carry the development of an instructional idea to a finished product.

651 Topics in Education. Semester course; 1-3 credits, repeatable to nine credits. A course for the examination of a specialized issue, topic, readings, or problem in education. Check with department for specific prerequisites.

660 Research Methods in Education. Semester course; 3 lecture hours. 3 credits. Designed to provide an introductory understanding of educational research and evaluation studies. Emphasizes fundamental concepts, procedures, and processes appropriate for use in basic, applied, and developmental research. Includes developing skills in critical analysis of research studies. Analyzes the assumptions, uses, and limitations of different research designs. Explores methodological and ethical issues of educational research. Students either conduct or design a study in their area of educational specialization.

661 Educational Evaluation: Models and Designs. Semester course; 3 lecture hours. 3 credits. Prerequisite: EDU 660 or permission of instructor. A comprehensive review of the major evaluation theories and models including their focus, assumptions, designs, methodologies, and audiences in educational policy-making and program development. Designed for students to gain an understanding of alternative procedures of educational evaluation, an in-depth knowledge of at least one theoretical approach to evaluation, and skills in interpretation of evaluation studies for policy and in developing an evaluation design for their area of specialization.

662 Educational Measurement and Evaluation. Semester course; 3 lecture hours. 3 credits. To provide an understanding of basic concepts of educational measurement and evaluation. Includes development, interpreta-

tion, and use of norm-referenced and criterion-referenced measures, standardized instruments, and qualitative assessments applicable to a wide variety of educational programs and settings. Students study in-depth measurement and/or evaluation procedures in their specialization. Course is a prerequisite for more advanced courses in research and evaluation.

672 Internship. 1-6 credits, repeatable to nine credits. Designed to study and integrate theory with practice; in clinical settings component supervised by university faculty. Includes seminars, conferences, selected reading, course projects, and other activities designed and evaluated by student and supervising faculty.

681 Investigations and Trends in Teaching. Semester course; 3 credits, repeatable to nine credits. A course designed to familiarize teachers and prospective teachers with recent trends and developments in course content, strategies for organizing learning experiences, and in presenting course material in their classrooms. Laboratory experience may be incorporated where appropriate.

682 Curriculum Development in Science Education. Semester course; 3 lecture hours. 3 credits. A course for science teacher-developed curriculum innovations which emphasize the initiation of formal and informal classroom work on current scientific trends, as well as special classwork and laboratory programs.

700 Externship. Semester course; 1-6 credits, repeatable to nine credits. Prerequisite: permission of department. Off-campus planned experiences for advanced graduate students designed to extend professional competencies; carried out in a setting, under supervision of an approved professional. Plan of work designed by extern with prior approval of the offering department. Externship activities monitored and evaluated by university faculty. State certification or equivalent may be required for some externships.

701 Urban Education. Semester course; 3 lecture hours. 3 credits. A study of urban education from historical and contemporary perspectives. This course includes study of the educative effect of urban environments; the development of public and private urban educational systems; the influence of social, political, and economic factors on urban educational programs; and the impact of theories, proposals, and practices on alternative futures.

798 Thesis. Semester course; 1-6 credits, repeatable to six credits. A research study of a topic or problem approved by the student's supervisory committee and completed in accordance with acceptable standards for thesis writing.

GRADUATE COURSES IN ADMINISTRATION (ASE)

600 Public School Administration. Semester course; 3 lecture hours. 3 credits. An overview of the theory and practice of public school administration. Emphasis will be placed on the roles of school boards, superintendents, principals, and supervisors at the elementary and secondary levels. Appropriate field-based experiences relating theory to practice.

601 Supervision of Instruction. Semester course; 3 lec-

ture hours. 3 credits. An advanced course in modern concepts of supervision on the elementary and secondary levels. Modern theories and practices of instruction will be examined. Appropriate field-based experiences relating theory to practice will be included.

602 Seminar in Elementary School Administration. Semester course; 3 lecture hours. 3 credits. Problems and issues in elementary school leadership. Major responsibilities of the elementary school principal. Enrollment limited to specialists in administration.

603 Seminar in Secondary School Administration. Semester course; 3 lecture hours. 3 credits. Problems and issues in secondary school leadership. Major responsibilities of the secondary school principal. Enrollment limited to specialists in administration.

610 School and Community Relations. Semester course; 3 lecture hours. 3 credits. New concepts and specific techniques in school-community relations for teachers; involvement in educational planning; involvement in community planning; and an examination of evaluative projects for community use. Appropriate field-based experiences relating theory to practice will be included.

611 School Law. Semester course; 3 lecture hours. 3 credits. Legal aspects of school administration which include constitutional and statutory provisions and court decisions.

620 Evaluation of Instruction for Supervisors. Semester course; 3 lecture hours. 3 credits. Designed to develop skills and knowledge for the evaluation of instructional personnel and educational programs. Identification of appropriate criteria, procedures for collecting information, and evaluation processes for the purpose of aiding educational personnel involved in staff development including staff assignment, promotion, and tenure decisions. Introduction to program evaluation procedures, basic evaluation concepts, and processes appropriate for utilization as programs are initiated and implemented.

632 Administration and Supervision of Special Education. Semester course; 3 lecture hours. 3 credits. Practices and problems in providing school programs for handicapped and gifted children in both urban and rural communities are discussed.

640 Public School Finance. Semester course; 3 lecture hours. 3 credits. Prerequisite: graduate standing. A study of theories, policies, and expenditures of school funds. Special attention will be given to the practice of educational finance within the public school structure. The course will include such topics as the school budget, financial accounting, purchasing and supply problems, school equipment, and school insurance.

641 School Personnel Administration. Semester course; 3 lecture hours. 3 credits. A study of the personnel function in educational organizations. Designed to explore techniques and problems of staff-personnel relationships in contemporary education.

642 Organization and Administration of Guidance Services. Semester course; 3 lecture hours. 3 credits. A study of organizational principles and procedures necessary for the effective administration of guidance services. Consideration is given to procedures used in es-

tablishing guidance programs or modifying existing ones (or both), including the study of various community resources that can contribute to more effective guidance services.

643 The Community School. Semester course; 3 lecture hours. 3 credits. The development and utilization of the community school concept will be examined. Community-wide use of school facilities and the involvement of the total community in the learning process will be studied. Emphasis will be placed on the physical plant design, organizational structure, staffing, and curriculum of the community school. The utilization of the community school to implement "life-long learning" will be stressed.

701 Development and Implementation of Administrative Policies in Education. Semester course; 3 lecture hours. 3 credits. Examines processes involved in developing and implementing educational policy from the perspective of the school administrator. Emphasis is given to the roles of federal and state governments in policymaking with attention to problems encountered in implementing educational policies.

702 Educational Administration: Contemporary Theory and Practice. Semester course; 3 lecture hours. 3 credits. Prerequisite: ASE 600 or equivalent. Study of recent developments in administrative theory and the application of these theories to contemporary and future educational issues and problems.

704 School Business Administration. Semester course; 3 lecture hours. 3 credits. Study of theories, principles, and practices of school business administration as they apply at the school district and school building levels.

705 Planning Educational Facilities. Semester course; 3 lecture hours. 3 credits. Study of the theory, principles, criteria, procedures, and practices of planning educational facilities and the modernization, maintenance, and operation of existing facilities.

706 Advanced Supervision of Instruction. Semester course; 3 lecture hours. 3 credits. Prerequisite: ASE 601 or equivalent. Examines the development of the curriculum and management of instruction in schools; particular attention to organizational processes in schools and their relationship to instruction.

707 Advanced Educational Law. Semester course; 3 lecture hours. 3 credits. Prerequisite: ASE 611 or equivalent. Study of the legal aspects of curricular decision-making; the legal prerogatives and liabilities of school officials; and the legal responsibilities, rights, and liabilities of school personnel, school students, and parents of students.

GRADUATE COURSES IN ADULT EDUCATION (ADE)

600 The Adult Education Movement. Semester course; 3 lecture hours. 3 credits. The historical development of the adult education movement will be traced. Important events, laws, and personalities will be studied with emphasis on the philosophical foundations and social imperatives inherent in the concept of life-long learning. The effect of adult education history on the present will be analyzed with particular emphasis on future trends.

601 The Adult Learner. Semester course; 3 lecture hours. 3 credits. The physiological, psychological, and socioeconomic characteristics of adults will be studied. Particular emphasis will be placed on the differences between socioeconomic groups and the changes that occur with aging. The special characteristics of the disadvantaged and deprived will be analyzed. Relevant learning theories and their implications for adult education will be explored.

602 Instructional Strategies for Adults. Semester course; 3 lecture hours. 3 credits. Prerequisite: ADE 601. Systematic curriculum development models and specific teaching techniques that are effective with adults will be studied. Emphasis will be placed on individualizing instruction and the use of multi-media strategies. The specific concepts of media centers, learning centers, and programmed learning will be explored. Special attention will be given to techniques for the disadvantaged and undereducated.

603 Adult Program Management and Evaluation. Semester course; 3 lecture hours. 3 credits. Various administrative theories and patterns of management appropriate for adult programs as well as management principles and techniques will be studied. Emphasis will be placed on program promotion, staff recruitment, in-service training, student personnel services, and program evaluation. The various evaluation models will be studied. Formative evaluation will be stressed to improve instructional strategies, validate student diagnosis and placement, and to restate program objectives.

604 Adult Education Seminar. Semester course; 3 lecture hours. 3 credits. Restricted to second semester graduate students. Current problems in adult education are identified and discussed. Each student will review and report on research that is related to the problems identified. Emphasis will be on the synthesis and application of skills and knowledge gained in current and prior graduate courses.

610 The Community College, Its History and Development. Semester course; 3 lecture hours. 3 credits. Educational philosophy and its implementation will be reviewed to find the relationship and justification for the establishment of two year institutions of higher education. Particular emphasis will be placed on the evolution of the comprehensive community college.

611 The Community College Student. Semester course; 3 lecture hours. 3 credits. A study of the community college student as a developing individual and as a learner. Assessment and evaluation of the special problems of the community college student and the institutional opportunities for humanizing instruction and student services will be emphasized.

612 Community College Organization and Administration. Semester course; 3 lecture hours. 3 credits. Organizational patterns, administrative theories, and practices as applied to community college education.

613 Community College Instructional Staff Development and Supervision. Semester course; 3 lecture hours. 3 credits. Study and evaluation of faculty supervision and professional growth needs. Emphasis is placed upon the identification and analysis of the duties, responsibilities, and factors involved in the supervision of

instructional programs and on designing staff development activities at the community college level.

615 Legal and Fiscal Aspects of Community College Education. Semester course; 3 lecture hours. 3 credits. The legal framework of community college education. Federal, state, and local statutory and constitutional provisions bearing on administrative relationships with faculty and students. Funding sources, policies, and procedures.

620 Human Resource Development. Semester course; 3 lecture hours. 3 credits. General investigation and overview of the training function in educational, business, industrial, governmental, and voluntary organization. An overview of the history and literature of HRD; roles of the HRD practitioner; the relationship of training to organizational effectiveness; and the various special settings of HRD.

621 Skills Development for Human Resource Development. Semester course; 3 lecture hours. 3 credits. This course is designed to develop a variety of the special skills that the HRD practitioner may expect to employ as a trainer. Skills training will be provided for small group leadership, management, career development, and other areas of current interest.

622 Human Resource Development Program Design. Semester course; 3 lecture hours. 3 credits. This course builds on the student's knowledge of adult learning strategies and emphasizes the special factors which are peculiar to designing, conducting, and evaluating training programs in organizations. Particular attention will be given to job analysis, special populations in organizations, preparation of training documents, and measuring the cost-effectiveness of training results.

623 Seminar in Human Resource Development. Semester course; 3 lecture hours. 3 credits. General investigation and overview of the training function in educational, business, industrial, governmental, and voluntary organizations. An overview of the history and literature of HRD; roles and the HRD practitioner; the relationship of training to organizational effectiveness; and the various special settings of HRD.

630 Education and Aging. Semester course; 3 lecture hours. 3 credits. A study of the educational implications of the aging process on the design, development delivery, and evaluation of programs for older adults. Educational characteristics of adults during later maturity (55 and older) and various types of programs available will be examined.

701 Organization and Administration of Training Activities. Semester course; 3 lecture hours. 3 credits. This course will focus on the policies, procedures, and philosophy essential to establishing or up-dating the training department and the training staff. Emphasis will be placed upon the roles of the training manager, organizing the training function, recruiting and developing training staff, budgeting and controlling training costs, and developing training records systems. (This is a concentration course in the Human Resource Development Track of the Ph.D. program in urban services.)

702 The Training Consultant. Semester course; 3 lecture hours. 3 credits. This course will emphasize the roles,

ethical responsibilities, and change agent skills of internal and external consultants. Models and procedures for planned systematic intervention strategies will be presented and fitted to various organizations and agencies. (This is a concentration course in the Human Resource Development Track of the Ph.D. program in urban services.)

703 Diagnosing Training and Development Needs. Semester course; 3 lecture hours. 3 credits. This course examines the nature and characteristics of systematic diagnosis of the educational and training needs of organizations. It surveys, analyzes, and critiques instruments trainers use in the HRD effort. Emphasis will be placed on the translation of identified needs into problem statements and action plans for conducting training activities. (This is a concentration course in the Human Resource Development Track of the Ph.D. program in urban services.)

704 Group Training Processes and Procedures. Semester course; 3 lecture hours. 3 credits. This course will focus on the forms and purpose of group methods in small and large group settings such as panels, forums, group discussions, conferences, symposiums, workshops, seminars, clinics, and institutes. Major emphasis will be placed on democratic group leadership and implementing systematic group planning procedures. The course will stress the learners' participation in each of the procedures and their ability to use such methods in actual training activities. (This is a concentration course in the Human Resource Development Track of the Ph.D. program in urban services.)

GRADUATE COURSES IN COUNSELOR EDUCATION (COE)

510 Non-Written Communications Skills for Pharmacists. Semester course; 3 lecture hours. 3 credits. No prerequisites. This course is designed to provide basic non-written communications skills for pharmacists. Students will be provided with an overview of the skills to be learned, a demonstration of the skills, and opportunities to practice the skills under supervision. The primary focus of the course will be on experimental activities designed to build effective non-written communications skills for pharmacists.

601 Theories of Counseling. Semester course; 3 lecture hours. 3 credits. The theories upon which counseling is based will be presented, with particular attention placed on the research underlying the theories. The primary focus will be on providing students with a theoretical foundation upon which to base their counseling techniques.

602 Practicum: Techniques of Counseling. Semester course; 3 lecture hours. 3 credits. Prerequisites: EDU 502 and COE 601 or permission of instructor. A study and application of a variety of counseling techniques employed in the counseling relationship. Emphasis will be placed on counseling skill development.

603 Group Procedures in Counseling. Semester course; 3 lecture hours. 3 credits. Introduction to the group process, group counseling, and group guidance contrasted and defined; basically theoretical.

604 Practicum: Group Procedures in Counseling and Guidance. Semester course; 3 lecture hours. 3 credits. Utilization of small-group interaction as a vehicle to explore techniques and procedures common to human relations study. Focus on the teaching of interpersonal effectiveness, behavior objective identification, and developing of experiences relevant to leadership, communication skills, decision making, and development in effective or humanistic education.

605 Career Information and Exploration. Semester course; 3 lecture hours. 3 credits. Designed to provide the potential counselor with an understanding of theoretical approaches to career development grades K-adult. Emphasis will be given to the relationship between counselor and student(s) in the career exploration and decision-making process. A review of occupational, educational, and personal-social information resources will be made.

606 Assessment Techniques for Counselors. Semester course; 3 lecture hours. 3 credits. An examination of individual and group tests will be made. Particular attention will be given to tests of intelligence, aptitude, achievement, interest, and personality. Emphasis will be placed on the importance of careful selection, appropriate administration, skilled interpretation, and effective use of assessment instruments used by counselors.

610 Guidance in the Elementary School. Semester course; 3 lecture hours. 3 credits. An examination of basic counseling and guidance approaches for working with children. Emphasis will be given the development role of the elementary school counselor. Specific methods for individual counseling, group counseling, and classroom guidance will be discussed and practiced.

611 Guidance in the Middle School. Semester course; 3 lecture hours. 3 credits. Prerequisites: EDU 502 and COE 601. An intensive study of the guidance and counseling programs and strategies that best meet the needs of adolescents. The course is both theoretical and practical, with students expected to spend 15 hours on site in a middle school guidance office.

620 Student Personnel Services in Higher Education. Semester course; 3 lecture hours. 3 credits. Prerequisites: COE 601 and ASE 642. A course which focuses attention on administration decision making and problem solving in the area of student personnel services. Emphasizes the case study approach; students will participate in various administrative experiments requiring the employment of administrative theory and practice.

621 Guidance Seminar. Semester course; 3 lecture hours. 3 credits. Prerequisite: open to advanced students with permission of instructor. An advanced course designed to provide a means for intensive study of guidance services. The approach will be to integrate the knowledge and skills from the various disciplines as they relate to the work of the counselor.

GRADUATE COURSES IN EARLY CHILDHOOD HANDICAPPED (ECH)

601 Assessment of Young Handicapped Children. Semester course; 3 lecture hours. 3 credits. Prerequisite: EDU 551 or 541. Designed to provide experiences which

220 School of Education

will equip the student with skills, attitudes, and understandings needed for identification and effective use of appropriate assessment procedures for developing individualized educational programs and instructional plans.

602 Instructional Programming for Preschool Handicapped Children. Semester course; 3 lecture hours. 3 credits. An examination of teaching procedures in preschool handicapped programs with specific attention given to 1) curriculum planning and development and 2) environmental planning and development for preschool handicapped. A secondary emphasis will be placed on developing the student's awareness of her/his own resources in curriculum planning.

603 Case and Program Management for Preschool Teachers of the Handicapped. Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. A course reflecting the provisions of state and federal laws applicable to programming for handicapped children below age five and those follow-up procedures which assure a continuum of appropriate services. Addressed to the identification of administrative tasks which are unique to the preschool handicapped population and administrative practices which contribute to effective programming.

GRADUATE COURSES IN ELEMENTARY EDUCATION (EEL)

610 Critical Investigations in Social Studies Education. Semester course; 3 lecture hours. 3 credits. Prerequisite: EDU 491 or permission of instructor. Assuming a knowledge of basic content and techniques in the teaching of social studies in elementary and middle schools, this course conducts a critical examination of various curricula and methodologies from the standpoint of current research, philosophical positions, and relevant learning theory.

611 Critical Investigations in Mathematics Education. Semester course; 3 lecture hours. 3 credits. Prerequisite: EDU 422/522 or permission of instructor. A critical investigation of current and appropriate learning theories, instructional activities, programs, and manipulative materials applicable to mathematics education in the elementary school. This course assumes an overall knowledge of the more prominent techniques and materials used to teach mathematics in elementary and middle schools. Students will undertake in-depth critical studies of alternative curricula, materials, and strategies based on experience, learning theory, and research findings.

620 Creative and Cognitive Development in Young Children. Semester course; 3 lecture hours. 3 credits. Prerequisite: EDU 603. Application of theories of creative and cognitive development in the teaching of young children.

621 Child Study and Assessment in Early Childhood Education. Semester course; 3 lecture hours. 3 credits. Investigation and application of methods of observing, recording, and interpreting the behavior of young children. Review of criterion and norm-referenced measures for assessing capacities and needs in early childhood education . . . as a baseline for prescribing/providing appropriate activities.

622 Program in Early Childhood Education. Semester course; 3 lecture hours. 3 credits. Review of historical seeds of early childhood education programs. Analysis of current prototypes, center and home-based, for infants and young children as a basis of program development and evaluation. Visits to model programs whenever possible. Overview of current research on program in early childhood education. Required of all students in early childhood education.

623 Implementing and Administering Programs for Young Children. Semester course; 3 lecture hours. 3 credits. Prerequisite: EEL 622. This course is designed to provide the student with fundamental knowledge and skills in the implementation, supervision, and administration of educational programs in schools, centers, and homes for infants and young children. A problems approach will be utilized with emphasis on creative management and evaluative processes.

624 Young Child and the Curriculum. Semester course; 3 lecture hours. 3 credits. Translation of curriculum development principles into appropriate curricular programs for young children. Impact of recent research on these curricula. Consideration of child development as related to planned activities and expected outcomes.

625 Cross Cultural Perspectives in Child Rearing and Early Education. Semester course; 3 lecture hours. 3 credits. Analysis of the impact of linguistic patterns, child rearing techniques, and socialization processes on the education of young children in various cultural settings.

626 Teachers and Parents: Partners in Early Childhood Education. Semester course; 3 lecture hours. 3 credits. A focus on the impact of parents in the education of young children and the role of the early childhood specialist working "in partnership" with these parents. Overview of research and prototype programs. Field-based projects.

GRADUATE COURSES IN EMOTIONALLY DISABLED (EMO)

600 Characteristics of the Behavior Disordered. Semester course; 3 lecture hours. 3 credits. This course focuses on the nature of children and youth described as behavior disordered/emotionally disturbed with emphasis on the biophysical, sociological, and psychological factors which relate to their educational needs. Related topics include school identification and assessment procedures, classifications of disorders, and treatment approaches.

601 Teaching the Behavior Disordered. Semester course; 3 lecture hours. 3 credits. Prerequisite: EMO 600. The course provides an in-depth study of instructional strategies and organization of activities for behavior disordered/emotionally disturbed children and youth including curriculum, media, materials, and physical environment. Skills are developed to plan and deliver instruction in a variety of educational settings including resource rooms, self-contained classes, and residential programs.

602 Classroom Management of the Behavior Disordered. Semester course; 3 lecture hours. 3 credits. An in-

depth analysis of strategies and techniques used in the management of behavior disordered/emotionally disturbed children and youth. Individual and group management of the behavior disordered in elementary through secondary educational settings will be discussed. Open only to advanced graduate students in the area of behavior disorders or with permission of instructor.

603 Human Interaction in Teaching. Semester course; 3 lecture hours. 3 credits. The course focuses on interpersonal relationships and communications between teachers, students, parents, and administrators. Communication and consultation skills are developed through role playing and simulations. Affective and personality variables in teacher-student interactions are explored.

GRADUATE COURSES IN ENGLISH/ENGLISH EDUCATION (ENE)

601 Young Adult Literature. Semester course; 3 lecture hours. 3 credits. An extended examination of literature written for young adults, of literature appealing to adolescents of literature appropriate for young people in middle schools and high schools. The course focuses on the content, characteristics, and teaching of such literature.

631 Teaching English to Minority Groups. Semester course; 3 lecture hours. 3 credits. A study of the problems confronted when teaching English to students from minority groups, with attention given to the importance of non-standard dialects and of preserving cultural uniqueness. Some emphasis will be placed on the student for whom English is a second language.

632 Applied English Linguistics. Semester course; 3 lecture hours. 3 credits. Application of linguistic theories and methods to selected teaching problems, such as teaching English grammar and usage, teaching English as a second or foreign language, or teaching standard English to students who speak different dialects. May be repeated for credit.

636 Teaching Composition. Semester course; 3 lecture hours. 3 credits. A study of the traditional and modern instructional strategies for teaching composition. The validity of strategies will be tested in the student's own writing.

637 Mass Media and the Teaching of English. Semester course; 3 lecture hours. 3 credits. A study of the use of the mass media in the English classroom. Emphasis will be on teaching methods designed to take advantage of the student's awareness of the media. Special attention will be given to television and film.

643 Teaching Basic Writing Skills. Semester course; 3 lecture hours. 3 credits. The emphasis of this course will be on developing the student's ability to teach fundamental writing skills. It will include such topics as diagnosis of writing problems, strategies for correcting problems, and methods for evaluating progress.

694 Internship in Teaching Writing. Semester course; 1 Lecture and 6 practicum hours. 3 credits. Observation and practice of instructional techniques in writing

courses. By special arrangement the practicum may be done at a community college or other nonuniversity setting.

GRADUATE COURSES IN HEALTH EDUCATION (HED)

500 Teaching Health in the Public Schools. Semester course; 3 lecture hours. 3 credits. Minority health issues, family influences, teenage attitudes, and signs of progress in health behavior are examined in this course. School health programs, including remedial, classroom instruction, and environmental aspects of school life are also considered.

505 Adolescent Medical and Social Problems. Semester course; 3 lecture hours. 3 credits. Seminar designed to acquaint those individuals working with an age group from 12 to 21 of the normal physiological and psychological development and medical and adjustment problems. This material will be presented by a series of lectures and case presentations with group participation. Topics will include drug abuse, under-achievers, sex education, emotional problems, constructive challenges for the adolescent, education for the adolescent, and the effect of these problems on families of the adolescent.

510 Sex Education for Teachers. Semester course; 3 lecture hours. 3 credits. Principles, methods, and content of sex education programs. Designed for teachers and counselors who are concerned with helping children and adolescents understand their sexuality and prepare for successful personal relationships with people.

GRADUATE COURSES IN LEARNING DISABILITIES (LDS)

600 Characteristics of the Learning Disabled. Semester course; 3 lecture hours. 3 credits. The nature and needs of the learning disabled with emphasis upon psychological and behavioral characteristics as related to educational needs.

601 Methods of Clinical Teaching. Semester course; 3 lecture hours. 3 credits., Prerequisites: EDU 468, 568, and LDS 600. Specific methodologies for teaching children with identified precognitive and cognitive learning disabilities using developmental, remedial, and compensatory approaches.

611 Teaching the Learning Disabled Adolescent. Semester course; 3 lecture hours. 3 credits. Prerequisite: LDS 600 and 601 or permission of instructor. An advanced course in identifying, diagnosing, and remediating academic learning problems in the adolescent. Explores the organization, selection, and implementation of compensatory programs and methods under the impact of cognitive, motivational, curricular, social, and vocational factors.

620 Advanced Educational Diagnosis of Developmental Processes. Semester course; 3 lecture hours. 3 credits. Prerequisite: EDU 568 or permission of instructor. An advanced course in the assessment and diagnosis of educationally relevant developmental processes in exceptional students, including perception, cognition, language, and socialization. Develops skill in utilization

and interpretation of educational purposes. Must be taken concurrently with Clinical Experience.

621 Advanced Educational Diagnosis of Learning Problems. Semester course; 3 lecture hours. 3 credits. Prerequisite: EDU 568 or permission of instructor. An advanced course in the assessment and diagnosis of educationally relevant learning skills in exceptional students, including language arts, mathematics, behavioral, vocational, and related skills. Develops skills in utilization and interpretation for educational purposes. Must be taken concurrently with Clinical Experience.

630 Techniques of Remediating Specific Language Disabilities. Semester course; 3 lecture hours. 3 credits. Prerequisites: REA 566 and EDU 568. Advanced course in techniques for the remediation of specific language disabilities with emphasis on reading problems. Includes interpretation of diagnostic reports and the presentation and evaluation of a variety of specific remedial methodologies.

631 Aural Rehabilitation. Semester course; 3 lecture hours. 3 credits. A detailed review in techniques for teaching lip reading and auditory training for the hearing-impaired child.

GRADUATE COURSES IN MENTALLY RETARDED (MRT)

556 Introduction to Mental Retardation. Semester course; 3 lecture hours. 3 credits. Initial graduate offering for special education majors concentrating in mental retardation. Includes review and discussion of all ages, functioning, and levels of the mentally retarded. Analysis of major issues in mental retardation such as deinstitutionalization, need for community services, sterilization, client advocacy, and new advances in treatment and prevention.

600 Language Development in the Severely Handicapped. Semester course; 3 credits. Prerequisite: permission of instructor. An intensive study of the development sequence of language acquisition and strategies for language intervention with the severe and profoundly mentally retarded and other severely handicapped children.

601 Curriculum Design for the Mentally Retarded. Semester course; 3 credits. Prerequisites: EDU 461/561 and 467/567. An examination of issues and strategies required in selecting and developing curriculum for the mentally retarded. Emphasis on three components: the content and behavior from resources used in teaching particular topics, the instructional design and procedures, and ways of managing instruction for the mentally retarded.

610 Teaching Strategies for the Severely Handicapped. Semester course; 3 lecture hours. 3 credits. This course is designed to provide instruction in teaching methods for individuals with severe behavior, learning, or emotional handicaps. Emphasis will be placed on instructional program development, task analysis, and methods of precision teaching.

611 Vocational and Occupational Adjustment for Exceptional Children. Semester course; 3 lecture hours. 3 credits. An orientation to occupations, occupational in-

formation, and problems of adjustment for the handicapped with emphasis on the mentally handicapped. Emphasis is also placed upon implications of vocational and occupational adjustment problems for curriculum. Selected visitations to employing agencies are an integral part of the course.

GRADUATES COURSES IN OCCUPATIONAL EDUCATION (OED)

500 Administration and Coordination of Occupational Education. Semester course; 3 lecture hours. 3 credits. Developing cooperative relationship with resources in the community, selecting and developing training stations, placement of students, and assisting job adjustment.

501 Occupational Education Adult Programs. Semester course; 3 lecture hours. 3 credits. Study of the principles and practices of adult programs as they apply to occupational education personnel; needs assessment, planning, promotion, curriculum evaluation, staffing, training, coordination, and program evaluation in occupational education institutions and in the business/industrial/health professions communities.

546 Competency-Based Methods in Occupational Education. Semester course; 3 lecture hours. 3 credits. Study of the principles, components, and practices of competency-based education in occupational education. Task analysis; evaluation and utilization of competency-based resources; preparation of instructional materials; CBE classroom/laboratory management procedures.

600 Curriculum Development in Occupational Education. Semester course; 3 lecture hours. 3 credits. Study of methods and techniques of developing occupational education curriculum; study of systems and procedures designed for occupational education curriculum development. Designed to integrate curriculum theories with current practices in the field; methods of involving business, industry, or professional personnel in developing curriculum materials.

601 Materials and Methods in Occupational Education. Semester course; 3 lecture hours. 3 credits. Prepares teachers for planning and equipping an occupational education classroom; organizing and managing instruction where occupational application experiences are provided through student or class projects.

604 Occupational Experience Seminar. Semester course; 1-3 credits, repeatable to maximum of 15 credits. Prerequisite: permission of advisor. Repeatable employment or observation experiences in approved businesses or industries and weekly seminar for application of occupations experiences to the occupational education curriculum. 30 clock hours of supervised employment or observation for each credit.

619 Organization and Administration of Occupational Education. Semester course; 3 lecture hours. 3 credits. Study of principles and practices involved in the local director's responsibilities for planning and evaluating programs of occupational education. Specific study of forecasting manpower needs and supply; advisory committee utilization; program planning and approval; staffing; preparing and interpreting state and local oc-

cupational education plans; occupational evaluation system.

659 Trends in Occupational Education. Semester course; 3 lecture hours. 3 credits. Study of the mission of occupational education as defined by legislation and by practitioners including fundamental concepts and basic objectives; growth, development, and current status; funding patterns; purposes and relationships of institutions that conduct occupational programs; current practices; and future prospects.

663 Management of Curriculum Development in Occupational Education. Semester course; 3-6 credits. Prerequisite: permission of advisor. Study of systems and procedures designed for occupational education curriculum improvement; methods and techniques of managing occupational education curriculum development; needs assessment; program design, development, and implementation.

665 Supervision in Occupational Education. Semester course; 3 lecture hours. 3 credits. Study of the principles and practices of supervision and their application to occupational programs. Specific study of personnel selection, development, and evaluation; school-community relationships; student guidance and selection; class scheduling; curriculum management; planning and maintaining facilities and equipment.

GRADUATE COURSES IN PHYSICAL EDUCATION (PHE)

500 Motor Development of Young Children. Semester course; 3 lecture hours. 3 credits. This course will deal with the development of small children, pre-school, kindergarten, and first-grade children, through physical education. Emphasis will be on the construction of a program of motor development for each of these three groups. The programs will be based on the research findings in such areas as perceptual-motor development, motor learning, educational psychology, and others. Those students and teachers in the fields of physical education, special education, and elementary education should find this course useful in developing programs of motor development for their students.

514 Physical Education for Special Populations. Semester course; 3 lecture hours. 3 credits. No prerequisites. This course is designed to provide fundamental information to students at the graduate level on physical education programming of impaired, disabled, and handicapped children. Course content focuses on programming techniques and methods that are most effective in meeting the specific physical education needs of the individual child. Emphasis is on the Public Law 94-142 provisions currently affecting physical education programming for special populations; in particular, the development of specially designed physical education programs, on individualized education programs, and providing programming in the "least restrictive environment."

521 Athletic Care and Training. Semester course; 3 lecture hours. 3 credits. The course is designed to give the student insight and understanding into the basic principles in the care and prevention of athletic injuries. Course content includes emergency first aid techniques,

mechanisms of athletic injuries with an anatomical and kinesiological analysis of common injuries, and preventive and protective techniques.

600 Seminar in Motor Learning Performance. Semester course; 3 lecture hours. 3 credits. Analysis of early patterns of behavior and the development of physical skills in childhood, adolescence, and adulthood. Consideration of differences in motor proficiency and factors affecting the acquisition of motor skills and concepts of motor learning with reference to the improvement of instructional practices.

601 Movement Physiology. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Physiological processes in relation to bodily exercises in every day life and sports activities. Physiological changes in the human organism due to movement. Investigation and application of research to physical education. Students must design, conduct, and complete a research study.

602 Development of Research Techniques in Physical Education. Semester course; 3 lecture hours. 3 credits. Theory and techniques involved in the analysis and interpretation of data pertinent to research in physical education. Basic statistics applied to data encountered in physical education research. Student must design, conduct, and write a pilot study.

610 Exercise Physiology: Instrumentation and Techniques. Semester course; 1 lecture and 4 laboratory hours. 3 credits. Designed to integrate practical and theoretical aspects of exercise physiology; experiences will benefit the physical educator, the coach, the athletic trainer, and the physiologist. Units include setting up and operating a movement physiology laboratory and techniques of open-circuit spirometry, closed-circuit spirometry, blood chemistry, and anthropometrics.

611 Mechanical Analysis of Human Motion. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Anatomical relationships dealing with arthrology, myology, neurology, and physical principles as applied to mechanical and kinesiological interpretation of normal, abnormal, and growth and development functions. Students must design, conduct, and complete a research study.

612 Administration and Supervision of Physical Education. Semester course; 3 lecture hours. 3 credits. Guides for administrative and supervision policies and problems in physical education. Observation techniques, standards for judging instruction, the supervisory conference, cooperative supervision. Emphasis placed upon the common problems met by administrators and supervisors.

613 General Motor Ability Evaluation. Semester course; 2 lecture and 2 laboratory hours. 3 credits. The theory of the construction of evaluative instruments in physical education with emphasis on a critical examination of existing measurement devices. Emphasis on the use of measurement as a tool for improving physical education programs.

614 Motor Assessment for Special Populations. Semester course; 3 lecture hours. 3 credits. Prerequisites: PHE 514 or permission of instructor. This course is designed to provide the student with basic information regarding motor tests and observational instruments that assess

and evaluate special populations. The content of the course will focus on the analysis of these tests as to their 1) main components and items purporting to measure these components; 2) administration, i.e., time, administrator's experience, group size, validity and reliability, and standardization; and 3) use in establishing and monitoring annual goals and short-term objectives for a handicapped child's individualized education program.

621 Sports Medicine. Semester course; 3 lecture hours. 3 credits. Prerequisite: PHE 521 or permission of instructor. The course is designed to give the student knowledge in the advanced principles of prevention and treatment of athletic injuries. The course includes advanced first aid techniques and the more sophisticated means of athletic care and prevention. Students are exposed to such modalities as mechanical therapies, thermal therapy, cryotherapy, hydrotherapy, and electrotherapy. One major component of the course deals with therapeutic exercise and its use in the rehabilitation of the injured athlete.

GRADUATE COURSES IN READING (REA)

600 Analysis and Correction of Reading Problems. Semester course; 3 lecture hours. 3 credits. Prerequisite: EDU 561 or 549. An analysis of factors relating to reading disability. Diagnostic testing procedures and instructional

strategies appropriate for the reading specialist in clinical and classroom settings will be emphasized.

601 Psycholinguistics and Language Arts Curriculum. Semester course; 3 lecture hours. 3 credits. An investigation of the psychological processes involved in language behavior and the relationship of these processes to the teaching of the basic communication skills.

602 Teaching Reading to Adults. Semester course; 3 lecture hours. 3 credits. An examination of strategies appropriate for teaching adult readers functioning at levels ranging from beginning to college level. Basic reading concepts, skills, and adult reading methods and materials are analyzed. Focus is on adapting teaching techniques for use with adults in various organizational patterns.

603 Seminar in Dynamics of Reading Readiness. Semester course; 3 lecture hours. 3 credits. Intensive study of the emotional, social, intellectual, and physical factors involved in development of pre-reading and beginning reading skills. Emphasis on current research and teaching methodology.

604 Reading Instruction in the Content Areas. Semester course; 3 lecture hours. 3 credits. Emphasis of the course is on preparing teachers to apply skills and methods of reading instruction to content areas in elementary and secondary school curricula. The course will include theoretical bases and methodology for incorporating reading skills within content areas of instruction.



PART IX—School of Nursing

ADMINISTRATIVE OFFICERS

JOAN F. BROWNIE, R.N., B.S., M.S., Ph.D.
Dean

ETHELYN E. EXLEY, R.N., Ed.D.

Assistant Dean, Academic Affairs

MARGARET R. SPAULDING, R.N., Ph.D.

Assistant Dean,

Clinical Affairs and Resource Development

The School of Nursing originated in 1893 as part of the University College of Medicine. Since then, the educational program has evolved from a basic diploma program to multiple programs at the baccalaureate and master's degree levels. Continuing education, research, and outreach programs are included. The School of Nursing takes pride in its long history of service to the profession of nursing and continues to be a leader in nursing education in Virginia.

PHILOSOPHY

The graduate program is committed to the goals of the School of Nursing and the university. Differentiation between the undergraduate and graduate programs is reflected in the philosophy and purpose of graduate education, the characteristics of graduates, and the program objectives.

The School of Nursing believes that graduate education is professionally-oriented and follows general and professional baccalaureate study in which nursing is included in upper division offerings.

Graduate education in nursing focuses on

the development, utilization, and transmission of knowledge. Advanced study in a clinical nursing specialty and in the functional role synthesizes theory and process. The graduate program is designed to develop the scholarship and leadership potential of those involved. Advanced study emphasizes analysis and synthesis of knowledge from diverse areas of learning. Systematic investigation of the concepts underlying nursing and leadership roles in changing environments and complex health care systems are explored.

The program's purpose is to prepare nurses to develop and implement nursing practice through assumption of a primary role as clinical specialist, teacher, supervisor, nurse practitioner, or administrator.

GRADUATE PROGRAMS IN THE SCHOOL OF NURSING

The School of Nursing offers programs of study leading to the Master of Science degree. Programs combining major study in a clinical area with a minor functional area or psychiatric-mental health are

Major	Minor	Approximate Length
Community Health Nursing	Teaching Supervision	3 Sem 1 SS
	Clinical Specialization	3 Sem 1 SS
Gerontologic Nursing	Clinical Specialization	4 Sem

Maternal and Infant Nursing	Teaching Clinical	3 Sem 1 SS
	Specialization	3 Sem 1 SS
	Psych-Mental Health	3 Sem 1 SS
Medical-Surgical Nursing	Teaching Clinical	3 Sem 1 SS
	Specialization	3 Sem 1 SS
	Supervision Psych-Mental Health	3 Sem 1 SS
Nursing of Children	Teaching Clinical	3 Sem 1 SS
	Specialization	3 Sem 1 SS
	Psych-Mental Health	3 Sem 1 SS
Psychiatric-Mental Health Nursing	Teaching Clinical	4 Sem
	Specialization	4 Sem

Programs combining major study in a clinical area with preparation as a nurse practitioner are:

Major	Nurse Practitioner	Approximate Length
Community Health Nursing	Family Nurse Practitioner	4 Sem 1 SS
Maternal and Infant Nursing	OB/GYN Practitioner	4 Sem 1 SS
Nursing of Children	Pediatric Nurse Practitioner	4 Sem 1 SS

Major study in nursing services administration does not require a minor.

Major	Approximate Length
Nursing Services Administration	4 Sem

ADMISSION REQUIREMENTS AND PROCEDURES

The purpose of admission requirements and procedures is to encourage applications from competent students and to ensure selection of those whose ability, education, and motivation qualify them to pursue successful graduate study in nursing.

To be considered for admission applicants must have

1. A Bachelor of Science in nursing with an upper-division major from an NLN accredited school.
2. Acceptable scores on the Graduate Record Examination (General Aptitude Test only).
3. Current license to practice as a regis-

tered nurse and professional liability insurance.

4. References from the applicant's undergraduate program in nursing and from employers.
5. A personal interview may be requested.

Preference will be given to applicants with a minimum of one year of practice within the past five years.

Admission to study as a nurse practitioner in the graduate program requires a minimum of one year of practice in a related area and a personal interview. Preference will be given to applicants from an area in need of primary health care and/or those who have a commitment from a physician to provide a preceptorship or employment.

Admission to the major in nursing services administration requires experience in nursing practice and management including mid-level responsibility for personnel management, program planning, and budget, such as is usually contained in positions of head nurse and supervisor. A personal interview is expected.

Applications and catalogues can be obtained from University Enrollment Services, Graduate Admissions, Virginia Commonwealth University, 821 West Franklin Street, Richmond, VA 23284.

Additional program information and advisement can be obtained through the assistant dean of academic affairs, School of Nursing, Box 567, MCV Station, Richmond, VA 23298.

Applications are reviewed by the School of Nursing. Applicants will be notified of action by the dean of the School of Graduate Studies. Applicants who are granted provisional admission are responsible for satisfying the provision or may be subject to dismissal. Applicants should accept an admission offer in writing and submit a tuition deposit of \$50 to the director of enrollment services. The tuition deposit is not refundable but will be applied to tuition during the first semester of enrollment in courses. Applications not completed by June 1 for the fall semester and November 1 for the spring semester may not be processed in time for registration. Applicants whose applications arrive late may be considered for enrollment as special students, but there is no assurance

that they will be accepted into a degree program.

SPECIAL STUDENTS

Students who are not applicants for the degree may be admitted to individual courses. Permission to register for courses is at the discretion of the School of Nursing.

ENROLLMENT

Students may begin study during fall, spring, or summer sessions. Students should discuss with their advisors the availability of sequential courses. Once admitted, students are expected to abide by enrollment policies of the School of Graduate Studies.

SCHOLARSHIPS, GRANTS, LOANS

Applications for financial assistance must be filed for all forms of financial assistance, including traineeships. These applications may be obtained from the Financial Aid Office, Virginia Commonwealth University, Box 244, MCV Station, Richmond, VA 23298.

Limited financial assistance is available through traineeships administered by the School of Nursing. A copy of the application for financial assistance should be filed with the assistant dean.

GRADUATION REQUIREMENTS

To be a candidate for the degree of Master of Science in nursing, students must be recommended by the faculty and must

1. Complete all requirements for the prescribed curriculum within five calendar years of the first registration for work to be credited toward the degree.
2. Earn at least a "B" grade in all nursing courses.
3. Earn at least a cumulative average of 3.0 in all work presented for graduation.
4. Conform to School of Nursing policies in respect to pass-fail grading for course work or thesis study.
5. Present a satisfactory defense of the thesis at oral examination at least two weeks before the commencement exercises at which the student expects to receive the degree.
6. Submit five or more copies of the thesis

prepared according to the standards approved by the University Graduate Council.

The degree will be granted only after all requirements have been fulfilled, all fees to the university have been paid, and bound copies of the thesis have been submitted. Degrees are not granted in absentia unless written request is made to the assistant dean, academic affairs, and permission is granted.

ACADEMIC REQUIREMENTS

1. All full-time graduate students are expected to register for a minimum of 12 semester hours credit per semester, including research.
2. No student may proceed in the program with a GPA less than 3.0 or with a grade of less than "B" in any nursing course without the approval of the assistant dean, academic affairs.
3. An advisor for each student is appointed by the appropriate department chairman. That advisor will assist the student in program planning and registration procedures.
4. Each student will select, with the approval of the department chairman, a thesis committee of no fewer than three university faculty. One member must be outside the major department and may be outside of the School of Nursing. The thesis committee chairman is selected from the graduate faculty of the School of Nursing but not necessarily from the student's major department.
5. The thesis committee will monitor the design and conduct of the research, the preparation of the thesis, and will serve as moderators in examination of the thesis.
6. The thesis is examined by the student's thesis committee and the additional moderator appointed from the graduate faculty of VCU.
7. Each moderator shall receive a copy of the candidate's thesis and shall decide on its acceptability. The moderators may confer with each other before making their decision.
8. On approval of the thesis, the student appears for a final oral examination by the thesis moderators. The final exami-

nation shall be open to the faculty, and its time and place together with the candidate's name, department, and title shall be announced at least ten days in advance.

9. A favorable vote of the examining committee with no more than one negative vote shall be required to pass the oral examination. All moderators will attend and will cast a vote.

MASTER OF SCIENCE DEGREE

Program Requirement—Clinical Major

Major:

NUR 500 Contemporary Nursing 3 credits
 Advanced Clinical Courses 12-14 credits
 Support Courses—one or two courses with from 5-7 credits related to the clinical major.

Minor:

Nursing Practicum 5 credits
 Support Courses 9 credits

Research:

NUR 590—Methods of Research 3 credits
 NUR 690—Research Seminar 1 credits
 NUR 798—Thesis 6 credits

Undergraduate statistics is required prior to admission or undertaking thesis research. Specific advanced clinical and support courses will be determined by the major department.

TRANSFER CREDIT

Students may take 12 of the required credits at another institution and transfer these to VCU. The School of Nursing will determine the acceptability of courses for transfer credit.

MASTER OF SCIENCE DEGREE PROGRAMS

Community Health Nursing

The major in community health nursing includes theoretical knowledge of the physical, behavioral, and sociocultural factors that influence human behavior in health and illness. The advanced clinical content in nursing includes opportunities to apply theories and modalities of treatment in family nursing and in meeting health needs of populations and defined community groups.

Emphasis is on the identification and practice of innovative roles in nursing within the context of a changing health care system. Related courses in other fields are selected for their contribution to the major. Students may select a sequence of courses in disciplines related to an area of special interest within the broad scope of community health nursing and may develop this area in their clinical practice and research. Graduate study in education, administration, and family nurse practice is shared with graduate students from fields other than nursing.

Family Nurse Practitioner

Students enrolled in the family nurse practitioner minor will complete the following courses in addition to the requirements for the community health nursing major: NUR 501, 601, 616, 617, 618, and graduate physiology. Students who select the family nurse practitioner program are eligible to apply for certification by the Virginia Boards of Nursing and Medicine.

Gerontologic Nursing

The gerontologic nursing major prepares graduates to assume roles as specialists qualified to provide direct care to the well-aged as well as to the acutely and chronically ill, and to provide leadership and direction in community and institutional settings. The graduate will be able to conduct research, evaluate the outcomes of nursing intervention, lead group activities, and participate in community affairs concerning the elderly.

Maternal-Child Nursing

The majors in maternal and infant nursing and nursing of children provide an eclectic approach to the study of childbearing, child-rearing, and the growth years of the life cycle. Emphasis is on the family as a socializing unit in which each member interacts with and affects every other member in their achievement of developmental tasks and responses to situational crises. The nurse's role in assessing, monitoring, maintaining, and promoting health adaptation in resolving these crises is stressed.

In order to achieve an effective level of nursing intervention in a variety of settings, the program includes theoretical knowledge in physical, behavioral, and sociocultural

factors that influence human responses along the health-illness continuum. Emphasis is placed on increased self-understanding and skillful synthesis of theory in clinical practice areas and research.

Obstetric-Gynecologic or Pediatric Nurse Practitioner

Students enrolled in the nurse practitioner major will complete the following courses in addition to the requirements for the MCN major. Obstetric-gynecologic nurse practitioner: NUR 501, 601, 636, 637, 638; pediatric nurse practitioner: NUR 501, 601, 646, 647, 648, and graduate physiology.

Medical-Surgical Nursing

MCV Hospitals' patients are from both urban and rural areas of Virginia. The complexity of their illnesses provides a wealth of experiences for students of medical-surgical nursing. Opportunity to move out into the community, as well as to study within the hospital complex, offers students breadth as well as depth of preparation.

The focus of the graduate program in medical-surgical nursing is on the care of the acutely ill patient in intensive care settings. The advanced nursing courses concentrate on a variety of health-illness situations which individuals experience. Students select their own learning situations and have the opportunity to engage in independent study in each advanced course.

Students electing the teaching option have the opportunity to participate with undergraduate faculty in planning, organizing, implementing, and evaluating undergraduate student experiences. Actual practice in classroom and clinical laboratory teaching is provided under guidance. A microteaching session affords opportunity for student self-evaluation and improvement.

Students electing clinical specialization may select a focus from among the subspecialties in medical-surgical nursing for in-depth study and concentrated clinical practice. Practicing clinical specialists from MCV Hospitals are available for consultation which affords students the option to work in concert with those in actual practice.

Psychiatric-Mental Health Nursing

Students achieve a measure of expertise

toward meeting both professional and personal goals through a program of education which is individually planned. Practice in clinical settings is selected on the basis of goals. Individual supervision is appropriate to the particular clinical situations. Students have access to multidisciplinary experts in planning and implementing care for individual clients and their families and for persons and/or groups in the community.

NURSING SERVICES ADMINISTRATION

This program prepares graduates to assume executive level positions in nursing service administration. Approximately 49 credits are required, in addition to a six-hour accounting and statistics prerequisite. Students who wish to complete the accounting and statistics requirements prior to admission may do so by registering for BUS 205 and BUS 301. Students enroll in courses in the School of Nursing, the Department of Health Administration, and the School of Business. The focus of the program is both theoretical and experiential and seeks to promote the integration of administrative and nursing theories. Emphasis is placed upon systematic methods of investigation, including the completion of a thesis. Administrative practica are planned individually to capitalize on student background and to promote the development of new skills.

COURSE REQUIREMENTS

Courses on the next page are required components of programs of study leading to the Master of Science degree. Additional courses (*) will be selected from areas related to the major area of study.

CLINICAL FACILITIES

A variety of urban and rural agencies, including community, medical center, and state hospitals, public health services, private clinics and offices, federal and state centers and departments, are available for clinical study. These facilities provide generalized and specialized in-patient and ambulatory services for maternal and child health, psychiatric-mental health, medical and surgical treatment, geriatrics, and oncology. Selection of specific facilities for student experience

COURSE SELECTION BY MAJOR AREA OF STUDY

Courses Listed are Required Courses

	Community Health	Maternal Infant	Nursing of Children	Medical Surgical	Psychiatric- Mental Health
MAJOR					
Core Course.	NUR 500	NUR 500	NUR 500	NUR 500	NUR 500
Advanced Clinical	NUR 610	NUR 531	NUR 531	NUR 620	NUR 651
	NUR 611	NUR 632	NUR 642	NUR 621	NUR 652
		NUR 633	NUR 643		NUR 653
					PAC 561
					PAC 562
					*
Major Support (2 courses or 5-7 credits) . . .	BIS 521	BIO 539	BIO 539	BIO 539	*
	*	*	*		
Research	NUR 590	NUR 590	NUR 590	NUR 590	NUR 590
	NUR 690	NUR 690	NUR 690	NUR 690	NUR 690
	NUR 895	NUR 895	NUR 895	NUR 895	NUR 895
MINOR					
Teaching	NUR 693	NUR 693	NUR 693	NUR 693	NUR 693
Support Courses.	Three courses from such areas as philosophy of education, learning theories, teaching strategies, curriculum, development, or evaluation.				
<i>or</i>					
Clinical Specialties	NUR 694	NUR 694	NUR 694	NUR 694	NUR 694
Support Courses.	Three courses from such areas as organizational theory group process, teaching strategies, social organization, community planning, etc.				
<i>or</i>					
Supervision	NUR 695	NA	NA	NUR 695	NA
Support Courses.	Three courses from such areas as organizational theory, administrative theory, community planning, community organization.				
Nurse Practitioner	NUR 616	NUR 636	NUR 646	NA	NA
	NUR 617	NUR 637	NUR 647		
	NUR 618	NUR 638	NUR 648		
Support	BIO 539	BIO 539			BIO 539
Core.	NUR 501	NUR 501	NUR 501		
	NUR 601	NUR 601	NUR 601		

Nursing Services Administration

This course of study includes courses in the School of Nursing, Department of Health Administration, and School of Business.

Nursing	Health Administration	Business
NUR 500	HAD 602	BUS 607
NUR 590	HAD 606	BUS 624
NUR 680	HAD 609	
NUR 681	HAD 611	
NUR 682	HAD 624	
NUR 683	HAD 632	
NUR 690		
NUR 798		
		Electives
		6 credits

* Additional support courses will be selected from areas of study related to the major.
Nurse practitioner courses are completed in lieu of a minor area of study.

rience is based upon the needs of the individual student and the services available within the facility.

FACULTY

- Barrell, Lorna M. *Associate Professor and Chairman of Psychiatric-Mental Health Nursing* Ph.D., University of Illinois; widowhood, loss and coping.
- Brownie, Joan *Professor of Nursing and Dean* Ph.D., State University of New York at Buffalo; health manpower policy, evaluation of patient care.
- Collins, Judith *Associate Professor* M.S., Boston University; sexuality during pregnancy, vaginitis.
- Crummette, Beauty D. *Associate Professor of Nursing* Ph.D., University of Pittsburgh; asthma in children, nutrition in children, activity levels in infants and children.
- Exley, Ethelyn E. *Associate Professor of Nursing* Ed.D., Ball State University; human genetics, primary nursing.
- Francis, Gloria M. *Professor of Nursing* Ph.D., University of Pennsylvania; institutionalization, human separation and deprivation.
- Henry, JoAnne K. *Assistant Professor of Maternal-Child Nursing* Ed.D., University of Virginia; stress in primiparous women, stress in graduate students.
- Kissinger, Jeanette F. *Associate Professor of Medical-Surgical Nursing* Ed.D., University of Virginia; hypertension, health behavior.
- Mark, Barbara A. *Assistant Professor of Nursing Services Administration* Ph.D., Case Western Reserve University; organization effectiveness, multidisciplinary health care teams.
- Millen, Dianne L. *Assistant Professor* M.N., University of California-Los Angeles; respiratory nursing, values and ethics.
- Munjas, Barbara A. *Professor of Psychiatric-Mental Health Nursing* Ph.D., University of Pennsylvania; chronic mental illness behavior and intervention.
- Noble, Mary Anne *Associate Professor* D.Nsc., Boston University; psychological environment of intensive care units, communication and intensive care nursing.
- Olgas, Marya *Associate Professor and Chairman Medical-Surgical Nursing* Ph.D., New York University; body image, nursing science.
- Rademaker, Analie J. *Assistant Professor of Psychiatric-Mental Health Nursing* Ph.D., State University of New York at Binghamton; nursing and technology, stress and working mothers.
- Repp, Eleanor C. *Professor of Nursing* Ed.D., Columbia University; faculty workload, predictors of academic science, chronic obesity.
- Spaulding, Margaret R. *Professor and Chairman, Maternal-Child Nursing* Ed.D., Columbia University; parental infant bonding, obesity.
- Stern, Christa E. *Assistant Professor of Community Health Nursing* Dr. P.H., Tulane University; organizational development and human relations, community health administration.
- Strauss, Sarah S. *Assistant Professor of Maternal-Child Nursing* Ph.D., University of Washington; developmental disabilities, stress and coping.
- Tauer, Kathleen *Assistant Professor* M.N., University of California-Los Angeles; respiratory nursing, values and ethics.

- Tyzenhouse, Phyllis *Associate Professor of Community Health Nursing* Dr.P.H., University of Pittsburgh; cardiovascular epidemiology, environmental health.
- Warren, Charlotte J. *Assistant Professor* Ph.D., University of Virginia; concept and deafness, community psychology, family and group counseling.
- Yingling, Doris B. *Professor and Dean Emeritus, School of Nursing* Ed.D., University of Maryland; gerontological activities and historical research.

GRADUATE COURSES IN NURSING (NUR)

The course descriptions provided here are for the major in nursing and are restricted to students in this major. Please see other sections in this bulletin for courses in other schools and departments. Lecture hours may be used as seminar in which case the hours are doubled.

500 Contemporary Nursing. 3 lecture hours. 3 credits. A core course designed to provide knowledge of theories, practices, and procedures common to nursing prior to specialization. Required prior to or concurrent with the first course in the clinical specialty.

501 Introduction to Health Assessment. 3 lecture and 4 clinical hours. 4 credits. Prerequisite: BIO 539 or permission of instructor.

531 Maternal-Child Nursing Concepts. 2 lecture hours. 2 credits. I. Prerequisite or co-requisite: NUR 500. Study of key concepts in the childbearing and childrearing years which have implications for nursing action in maternal child nursing. Emphasis is placed on childbearing and childrearing as a continuum within which health-oriented crisis situations occur in varying frequencies. Appropriate nursing action to assist the family in reestablishing equilibrium will be covered.

590 Methods of Research. 3 lecture hours. 3 credits. Focus is on the methods and processes of systematic investigation, critical analysis of studies, and relationships among theory, research, and practice leading to the development of a thesis proposal.

591 Special Topics. 1-3 credits. Guided study of specific topics in nursing covered briefly in the more general courses.

592 Directed Study in Nursing. 1-3 credits. I, II, S. Prerequisite: permission of instructor. Independent study in a specific area of nursing developed under the supervision of a member of the graduate faculty.

601 Pharmacotherapeutics. Semester course; 1 lecture hour. 1 credit. Prerequisite: BIO 539. Seminar format focuses on the application of basic pharmacotherapeutic principles of drug categories to patient management.

610 Advanced Community Health Nursing. 2 lecture and 8 clinical hours. 6 Credits. Prerequisite: NUR 500. Advanced concepts and theories basic to the study of individuals and families in the community. Advanced nursing practice examines selected conceptual frameworks for family analysis and nursing intervention.

care organizations. Content includes perception, cognition, motivation, role theory, communication, decision-making, leadership, and conflict management.

681 Macro Organizational Analysis in Nursing. 3 credits. Focus is on analysis of macro characteristics of health care organizations and the place of the nursing department within the organization as a whole. Content includes organizational structure, organizational design, technology, organizational culture, organizational environments, and organizational effectiveness.

682 Organizational Development Strategies in Nursing. 3 credits. Focus is on planning and managing organizational redesign for the cost effective delivery of patient care. Content includes organizational assessment and diagnosis, intervention and evaluation strategies, strategies of large system change, and various topics in operational management. There is a practicum requirement of 120 hours associated with this course.

683 Practicum in Nursing Service Administration. 3 credits. Focus is on the integration of administrative theory and administrative practice in selected health care settings. Students analyze the reciprocal impact of different clinical interventions, unit social cultures, and administrative decision-making on patient care outcomes. There is a practicum requirement of 120 hours associated with this course.

690 Research Seminar in Nursing. 2 seminar hours. 1 credit. II. Prerequisite: NUR 590. Examines practical problems in the implementation of nursing research.

691 Special Topics in Nursing. 1-3 credits. Prerequisite: permission of instructor. Focuses upon problems, issues, or practice in nursing. Topics may include histori-

cal, contemporary, or emerging phenomena relevant to the growth and development of nursing or its practice.

692 Independent Inquiry in Nursing. 1-3 credits. Prerequisite: permission of instructor. Independent study, investigation, or research developed and conducted with guidance by graduate faculty.

693 Teaching Practicum. 1 lecture and 8 clinical hours. 5 credits. Prerequisite: 6 credits education courses and 10 credits nursing courses. Concentrated study in classroom and clinical teaching content. Supervised practice teaching is provided with undergraduate nursing students under the direction of master teachers.

694 Clinical Specialist Practicum. 1 lecture and 8 clinical hours. 5 credits. Prerequisite: methods of research, statistics, 10 credits in nursing courses. Concentrated study and clinical practicum directed toward clinical specialist preparation in the major area of interest.

695 Practicum in Supervision. 1 lecture and 8 clinical hours. 5 credits. I. Prerequisite: third semester standing. Philosophy, purposes, and elements of the social role of the contemporary supervisor as a developer of human resources and as a functioning member of organizational structures taught through selected supervised practice.

798 Thesis. 6 credits. Required of all students, the master's thesis constitutes carefully planned and executed research under the supervision of an advisor and in conjunction with a thesis committee. The student writes and presents the required thesis in the area of clinical nursing interest.

611 Advanced Community Health Nursing. 2 lecture and 8 clinical hours. 6 credits. Theories and concepts basic to health needs of populations and of change strategies related to community organization and action for health.

616 Assessment and Clinical Judgement in Family Nurse Practice I. 6 lecture and 8 clinical hours. 8 credits. Prerequisite: BIO 539. Didactic content taught by a multidisciplinary faculty covers common physical, mental, and developmental problems presented by children and adults in ambulatory settings. Supervised practice include history and physical examination, screening and diagnostic procedures, and interpretation of selected laboratory findings.

617 Assessment and Clinical Judgement in Family Nurse Practice II. 5 lecture and 12 clinical hours. 8 credits. Prerequisite: NUR 616. Continues to increase student's competency in identifying health-illness status of children and adults in ambulatory settings. Supervised practice covers increasing responsibility for assessment and clinical judgments.

618 Management of Common Health Problems of Children and Adults in Family Nurse Practice. 1 lecture and 20 clinical hours. 6 credits. Prerequisite: NUR 617. Focuses on development of management component of the family nurse practitioner role through working with a physician or family nurse practitioner.

620 Advanced Medical Surgical Nursing. 2 lecture and 8 clinical hours. 6 credits. I. Prerequisites: NUR 500, BIO 539, or equivalent. In-depth study of adult human responses to acute and chronic illness. Focus is on selected psychosocial concepts and theories, their implication for and application in clinical practice.

621 Advanced Medical Surgical Nursing. 2 lecture and 8 clinical hours. 6 credits. I. Prerequisites: NUR 500, BIO 539, or equivalent. In-depth study of selected physiological responses of adult with acute and chronic illness. Focus is on implication for and application in clinical practice.

632 Advanced Maternal-Infant Nursing I. 1 lecture and 8 clinical hours. 5 credits. II. Prerequisites: NUR 500, 531. Theory and practice are directed toward the concept that the care of the woman and her family during the reproductive years is a continuous integrated process, centered on the family in interaction with the physical and social environment.

633 Advanced Maternal-Infant Nursing II. 1 lecture and 8 clinical hours. 5 credits. I. Prerequisites: NUR 500, 531. Theory and practice are directed toward study of normal and abnormal physiological and psychosocial patterns associated with health care of women.

636 Primary Health Care in OB-GYN Nursing. 5 lecture and 8 clinical hours. 7 credits. Prerequisites: NUR 632, BIO 539. Focuses upon identification and management of common physical, mental, social, and developmental problems presented by women in the areas of maternity and gynecologic primary care.

637 Primary Health Care in Nursing Practicum I. 1 lecture and 16 clinical hours. 5 credits. Prerequisite: NUR 636. This course is designed to provide the student with

intensive clinical experience in the areas of maternity and family planning for clients in primary care.

638 Primary Health Care in Nursing Practicum II. 1 lecture and 16 clinical hours. 5 credits. Prerequisite or concurrent: NUR 637. This course is designed to provide continued intensive clinical experience and an opportunity to integrate the functional role of nurse practitioners with advanced nursing theory.

642 Advanced Nursing of Children I. 1 lecture and 8 clinical hours. 5 credits. II. Prerequisites: NUR 500 and 531. An eclectic approach to the nursing care of infants, toddlers, and preschool children. Relationships among family members and with outside support systems are analyzed. Emphasis is placed on attaining and maintaining health and preventing illness.

643 Advanced Nursing of Children II. 1 lecture and 8 clinical hours. 5 credits. I. Prerequisite: NUR 500 and 531. An eclectic approach to the nursing care of children and adolescents through the study of theories related to child development and health care needs.

646 Primary Health Care in Pediatric Nursing. 5 lecture and 6 clinical hours. 7 credits. Prerequisites: NUR 501, 531, 601, 642, 643, BIO 539. Prepares the student to provide primary care for children and families in collaboration with a physician.

647 Primary Health Care in Pediatric Nursing Practicum I. 1 lecture and 16 clinical hours. 5 credits. Prerequisite: NUR 546. Designed to provide intensive clinical experience with preceptor collaboration in the areas of health promotion and maintenance and treatment of the child with acute or chronic illness.

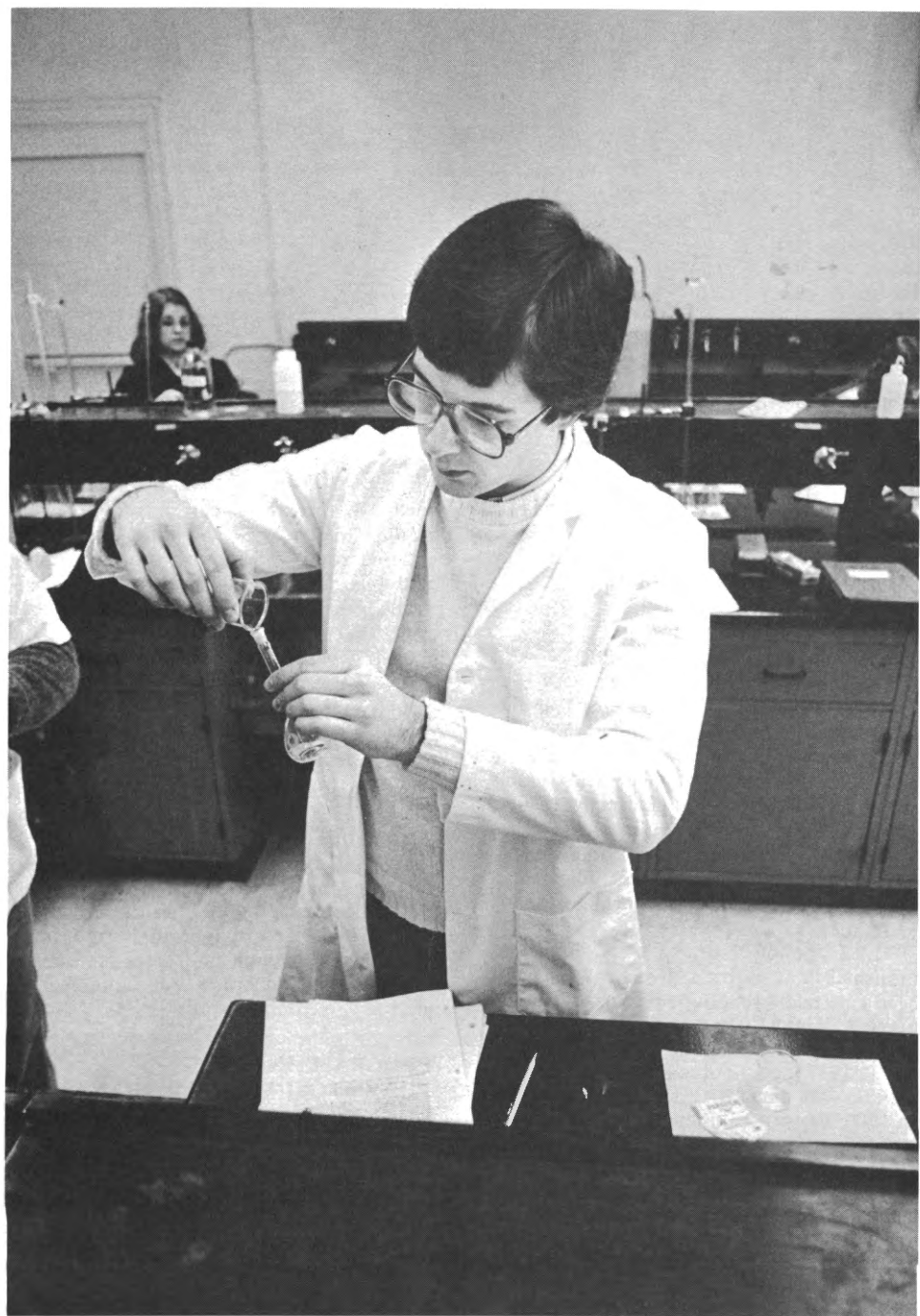
648 Primary Health Care in Pediatric Nursing Practicum II. 20 clinical hours. 5 credits. Prerequisite: NUR 546. Designed to provide further intensive clinical experience with preceptor collaboration in the areas of health promotion and maintenance and treatment of the child with acute or chronic illness.

651 Advanced Psychiatric-Mental Health Nursing. Semester Course; 2 seminar and 2 clinical hours. 2 credits. Prerequisite/corequisite: NUR 500. Focuses on individuals and their interactions with selected social systems. Theories related to values, systems, and psychiatric mental health nursing are examined. Content provides the basis for care of individuals and the use of the nursing process in clinical settings.

652 Advanced Psychiatric-Mental Health Nursing. 2 lecture and 8 clinical hours. 6 credits. II. Prerequisite: NUR 651. A continuation of the study psychiatric nursing concepts. Provides theory dealing with the study of families and family therapy.

653 Advanced Psychiatric-Mental Health Nursing. 2 lecture and 8 clinical hours. 6 credits. I. Prerequisite: NUR 652. Synthesis of psychiatric nursing theory and related areas in the assessment of community dynamics and potentials as they affect the mental health of persons within the community. Focus of the clinical practicum is upon community health care.

680 Individual and Group Behavior in Health Care Organizations. 3 credits. Focus is on the behavior of individuals and groups in nursing departments and in health



PART X—School of Pharmacy

ADMINISTRATIVE OFFICERS

JOHN S. RUGGIERO, M.S., Ph.D.

Dean

GRAHAM C. WINDRIDGE, Pharm.D., Ph.D.

Assistant Dean

C. EUGENE WHITE, B.S. Pharm., J.D.

Assistant Dean of Students

When the Medical College of Virginia opened its doors on November 5, 1838, pharmacy was taught as a part of the medical course. Although the General Assembly of Virginia amended the charter in 1879 to permit the institution to confer the degree of graduate of pharmacy upon properly qualified individuals, college records indicate that there were two graduates in pharmacy as early as 1876.

The School of Pharmacy was officially established in 1898; the University College of Medicine had a school of pharmacy when it opened in 1893. The two-year curriculum gave way to a three-year program in 1925, and in 1932 the school required four years of college work and a B.S. degree was awarded. In 1960, the program lengthened to the current five-year course leading to a Bachelor of Science in pharmacy degree. In 1975, authority was granted to offer to selected students a six-year program leading to the Doctor of Pharmacy degree.

The authority to award graduate degrees in the pharmaceutical sciences was granted by the Graduate Council in 1952. Depart-

ments in the school currently direct work leading to the M.S. and Ph.D. degrees in pharmaceutical chemistry, pharmaceuticals, and pharmacy administration. These programs provide the preparation and research experience for academic, governmental, and industrial careers.

FACILITIES

The School of Pharmacy is located in McGuire Hall on the Medical College of Virginia Campus. It shares this building with the Department of Pharmacology of the School of Basic Sciences. In the fall of 1983 the School of Pharmacy will occupy a new building which is currently under construction. Location in a major health science center provides excellent opportunities for interdisciplinary research and access to clinical facilities. The school is well equipped for graduate research.

PROGRAMS IN PHARMACEUTICAL/MEDICINAL CHEMISTRY

The Department of Pharmaceutical Chemistry offers programs leading to the M.S. and Ph.D. degrees in pharmaceutical chemistry. Students may select programs emphasizing organic medicinal chemistry, pharmaceutical analysis, or physical pharmaceutical chemistry.

All students will complete the following

core courses along with those elective courses deemed necessary to the student's program by the student's advisor. These electives may include courses outside the department.

Organic Pharmaceutical Chemistry — PHC 403

Advanced Medicinal Chemistry—PHC 506 and 607

Research Techniques—PHC 526

Seminar (each semester)—PHC 690

Biochemistry—BIC 503-4

Pharmacology—PMC 403

Advanced Organic Chemistry—CHE 604

At the present time the research interests of the department include synthesis and biological evaluation of new compounds, determination of relationships between chemical structure and biological activity, studies on modes of drug action, theoretical studies on structure-activity relationships of drugs including the use of molecular orbital theory and molecular connectivity, rational design of new drugs and studies on drug metabolism. Drug classes under investigation include antineoplastics, hypocholesteremics, neurotransmitter antagonists, peptide antibiotics, psychotropic agents, antihypertensives, and platelet aggregation inhibitors.

PROGRAMS IN PHARMACEUTICS AND PHARMACY ADMINISTRATION

The Department of Pharmacy and Pharmaceutics offers programs leading to the M.S. and Ph.D. degrees in pharmaceutics and pharmacy administration. Advanced degrees in pharmaceutics and pharmacy administration do not provide eligibility for licensure as a pharmacist. Persons interested in advanced professional programs in pharmacy are referred to the School of Pharmacy section of the Medical College of Virginia Campus bulletin where the Doctor of Pharmacy (Pharm.D.) program is described.

Students may elect to pursue a joint Pharm.D.-Ph.D. program. Such students must apply to and be accepted by both programs separately.

Graduate students majoring in pharmaceutics may select programs emphasizing biopharmaceutics, pharmacokinetics, or physical pharmacy. These students take suitable courses outside the department in the areas of basic sciences, mathematics, and

statistics, computer use, and chemistry. The selection and scope of these will depend on student needs and research interests.

Graduate students majoring in pharmacy administration may select programs emphasizing practice management or the drug selection process. Suitable outside courses may include statistics, computer use, hospital and health care management, and business management. At the present time, the research interests of the department include bioavailability studies, factors governing release of drugs from solid dosage forms, micellar nature of drug solutions, drug-protein binding interactions, effects of saturated and competitive metabolism on pharmacokinetics, clinical pharmacokinetics including computer modeling of pharmacokinetics in man and use of individual pharmacokinetic parameters in optimizing dosage regimens, development of analytical methodology for drugs in biological fluids, neonatal, pediatric, and geriatric pharmacokinetics, design and management of pharmacy-related health service systems, drug prescribing, and utilization studies.

ADMISSION REQUIREMENTS

The requirements for admission to graduate programs are described in the School of Basic Sciences section of this bulletin. Additional requirements concerning undergraduate education are imposed upon applicants to graduate programs in the School of Pharmacy.

Admission to graduate programs in pharmaceutical/medicinal chemistry is open to students having a bachelor's degree in pharmacy, chemistry, or a related science. Admission to graduate programs in pharmaceutics and pharmacy administration normally requires a bachelor's degree in pharmacy. However, applicants with degrees in chemistry, biology, or engineering may qualify in specific programs in pharmaceutics.

Acceptance is based upon undergraduate performance, satisfactory scores on the Graduate Record Examination, letters of recommendation, and, where applicable, TOEFL scores.

Applications for admission, as specified in the School of Basic Sciences section of this bulletin, should be sent to the Chairman, Graduate Admissions Committee, Depart-

ment of Pharmaceutical Chemistry or Department of Pharmacy and Pharmaceutics, School of Pharmacy, Virginia Commonwealth University, Box 581, MCV Station, Richmond, VA 23298.

REGISTRATION

While most students register for the first semester, beginning in August, arrangements may be made to initiate graduate work at other times during the academic year.

FINANCIAL ASSISTANCE

Graduate students in the School of Pharmacy may receive support via teaching assistantships, research assistantships, or fellowships. The American Foundation for Pharmaceutical Education provides support to eligible applicants for graduate study in the pharmaceutical sciences. All students, regardless of the level or the source of support, are required, as a part of their graduate education, to obtain teaching experience in lecture and laboratory.

THE STUDENT'S ADVISOR AND GRADUATE COMMITTEE

The departmental graduate coordinator will advise students until a permanent advisor has been chosen. During their first semester, new graduate students are required to arrange interviews with each graduate faculty member of their major department to discuss research projects. Students will select an advisor and a research project, and report the selection to the appropriate departmental committee. The advisor will arrange for the appointment of the students' graduate committees. The responsibilities of the advisor and the graduate committee are described in the School of Basic Sciences section of this bulletin.

REQUIREMENTS FOR GRADUATE DEGREES

Graduate students in the School of Pharmacy must satisfy the degree requirements described in the School of Basic Sciences section of this bulletin. In some cases more stringent requirements are imposed. These are described in detail in graduate student rules which are issued to all students.

All graduate students are required to at-

tend seminars in their own department and are encouraged to attend seminars of interest in other departments. Students are required to present seminars satisfactory to the faculty. Normally, students will present one seminar per year.

Graduate students are expected to devote maximum effort to the pursuit of their education. During normal working hours, graduate students are expected to be working on their research projects when they are not in class. Graduate students who are progressing satisfactorily may be granted permission by the chairman of their department to take outside employment during evenings or weekends.

ORGANIZATIONS

Rho Chi, the national honorary pharmaceutical society, has a chapter at VCU. Membership in this society is open to graduate students in the School of Pharmacy who meet the society's scholastic standards.

The Society of Sigma Xi Chapter at VCU brings in outstanding scholars for its lecture program. Graduate students who have demonstrated a marked aptitude for research in the field of pure or applied science may be elected to associate membership in the society.

Professional associations which meet locally include the Virginia Pharmaceutical Association and the Virginia Section of the American Chemical Society.

Pharmacy fraternities with chapters at VCU are Kappa Epsilon, Kappa Psi, and Phi Delta Chi.

Department of Pharmaceutical Chemistry

FACULTY

Boots, Marvin R. *Associate Professor* Ph.D., University of Kansas; synthetic medicinal chemistry.

Glennon, Richard A. *Associate Professor* Ph.D., State University of New York at Buffalo; synthetic medicinal chemistry.

Kier, Lemont B. *Professor and Chairman* Ph.D., University of Minnesota; theoretical medicinal chemistry.

Richard, Alfred J. *Professor* Ph.D., Clark University; physical properties of liquids and of solutions of macromolecules.

Soine, William H. *Assistant Professor* Ph.D., University of Kansas; analytical medicinal chemistry.

Stubbins, James F. *Professor* Ph.D., University of Minnesota; design and synthesis of new drugs.

van't Riet, Bartholomeus *Associate Professor* Ph.D., University of Minnesota; complexing ability of anti-tumor agents.

Westkaemper, Richard B. *Assistant Professor* Ph.D., University of Kansas; enzyme inhibitors.

Windridge, Graham C. *Associate Professor and Assistant Dean* Ph.D., University of California; peptide chemistry.

GRADUATE COURSES IN PHARMACEUTICAL CHEMISTRY (PHC)

A few 400 level courses (PHC 403, 404, 411, 412, 413, and 414) have been approved for select students to apply towards this degree. Students must have permission from their advisors to register for these undergraduate courses.

506 Advanced Medicinal Chemistry I. 3 lecture hours. 3 credits. A study of pharmacodynamics, theories relating to drug action, and the general principles of drug design.

521 Drug Assaying. 2 lecture and 4 laboratory hours. 4 credits. A consideration of the chemical assaying of U.S.P. and N.F. preparations, including synthetic and naturally occurring drugs.

526 Research Techniques in Pharmaceutical Chemistry. 0-2 lecture and 2-8 laboratory hours. 1-4 credits. The theory and application of classical and instrumental techniques used in pharmaceutical research are presented.

531 Medicinal Chemistry for Nurse Anesthetists I. 4 lecture hours. 4 credits. A review of the principles of organic chemistry and bio-organic chemistry with emphasis on the concepts necessary for an understanding of PHC 532.

532 Medicinal Chemistry for Nurse Anesthetists II. 3 lecture hours. 3 credits. Prerequisite: PHC 531 or equivalent. A series of lectures covering the structure-activity relationships, metabolism, and mechanism of action of selected agents.

607 Advanced Medicinal Chemistry II. 3 lecture hours. 3 credits. A study of the structure-activity relationships and mode of action of selected groups of drugs.

622 Stereochemistry. 2 lecture hours. 2 credits. A study of the number and kinds of stereoisomers of organic compounds, the differences in chemical and physical properties between stereoisomers.

632 Heterocyclic Chemistry. 3 lecture hours. 3 credits. A series of lectures covering a number of the more important heterocyclic systems.

681 The Ultracentrifuge. 2 lecture hours. 2 credits. The optical systems of the ultracentrifuge are discussed, as well as the applications of the ultracentrifuge in the

study of the properties of macromolecules such as proteins and nucleic acids.

690 Departmental Research Seminar. 1 lecture hour. 1 credit. In addition to reports presented by students, staff, and visiting lecturers, current problems and developments in pharmaceutical and medicinal chemistry are discussed.

691 Special Topics in Pharmaceutical Chemistry. 1-4 lecture hours. 1-4 credits. Lectures, tutorial studies, and/or library assignments in selected areas of advanced study not available in other courses or as a part of the research training.

697 Directed Research in Pharmaceutical Chemistry. 1-15 credits. Research leading to the M.S. or Ph.D. degree.

Department of Pharmacy and Pharmaceutics

FACULTY

Barr, William H. *Professor and Chairman* Ph.D., University of California at San Francisco; clinical pharmacokinetics, mechanisms of absorption.

Garrettsen, Lorne K. *Associate Professor* M.D., Johns Hopkins University; age-dependent pharmacokinetics.

Hepler, Charles D. *Associate Professor* Ph.D., University of Iowa; motivation and work behavior, drug prescribing.

Kline, Berry J. *Associate Professor* Ph.D., University of Wisconsin; biopharmaceutical analysis.

Pierpaoli, Paul G. *Associate Professor* M.S., University of Michigan; operations research, hospital management.

Poynor, Wesley J. *Assistant Professor* Ph.D., University of Texas at Austin; pharmacokinetics, application of computer technology to pharmacy practice.

Smith, Harold L. *Associate Professor* Ph.D., Medical College of Virginia; drug protein binding.

Wood, John H. *Professor* Ph.D., Ohio State University; biopharmaceutics, kinetics of saturable and competitive metabolism.

GRADUATE COURSES IN PHARMACY AND PHARMACEUTICS (PHA)

531 Pharmaceutical Product Development. 2 lecture and 4 laboratory hours. 4 credits. A study of the pharmaceutical, physicochemical, biopharmaceutical, and engineering principles and technology underlying the development of various pharmaceutical dosage forms for hospitals and industry.

532 Pharmaceutical Product Development. 2 lecture and 4 laboratory hours. 4 credits. A continuation of PHA 531.

601 Advanced Pharmaceutical Product Development. 3 lecture and 4-10 laboratory hours. 5-8 credits. An advanced study of the pharmaceutical, physicochemical, and engineering principles and technology underlying

the development of various pharmaceutical dosage forms.

602 Advanced Pharmaceutical Product Development. 3 lecture and 4-10 laboratory hours. 5-8 credits. A continuation of PHA 601.

608 Clinical Radiopharmacy. 1 lecture and 2 laboratory hours. 2 credits. Students receive training in the safe use, preparation, calibration, quality control, and clinical diagnostic use of current and investigational radiopharmaceuticals in nuclear medicine practice. Emphasis will be placed on obtaining patient medication histories for the evaluation of agents capable of *in vivo* and *in vitro* radioisotopic test modification.

611 Advanced Physical Pharmacy. 3 lecture and 0-4 laboratory hours. 3-5 credits. Detailed application of physicochemical principles to areas of pharmaceutical interest, including colloids, rheology, phase rule, complexation, kinetics, drug stability, and micromeritics.

612 Advanced Physical Pharmacy. 3 lecture hours. 0-4 laboratory hours. 3-5 credits. A continuation of PHA 611.

621 Advanced Biopharmaceutics and Drug Disposition. 2 lecture hours. 2 credits. Study at the advanced level of the relationships between the physicochemical properties of a drug and dosage form and the absorption, distribution, elimination, and pharmacological effects of the drug. Current theory and methodology involved in solving problems at the research level are emphasized.

622 Clinical Pharmacokinetics. 2 lecture and 0-2 laboratory hours. 2-3 credits. The application of current pharmacokinetic theory to clinical problems involved in optimizing and monitoring drug use in patients. Particular attention is given to adjustment of drug dosage in individual patients with impaired drug elimination due to renal and hepatic dysfunction.

624 Pharmacokinetics. 2 lecture hours. 2 credits. An advanced treatment of the kinetics of drug absorption, distribution and elimination utilizing mathematical mod-

els, analog, and digital computers for analysis of linear and non-linear biologic systems.

625 Biopharmaceutic Assay. 2 lecture and 2-6 laboratory hours. 3-5 credits. Theory and laboratory practice for systematic quantitative and qualitative analysis of drugs and metabolites in body fluids and tissues. Emphasis is on modern analytical methodology used in pharmacokinetic and biopharmaceutic studies.

626 Biopharmaceutic Assay. 2 lecture and 6-10 laboratory hours. 5-7 credits. A continuation of PHA 625 with particular emphasis on the identification of drug metabolites.

631 Advanced Hospital Pharmacy Management. 3 lecture hours. 3 credits. Major issues and problems related to the effective management and coordination of a contemporary institutional pharmacy service program are discussed largely in the context of hospital organizational structure and dynamics. Emphasis is placed on the social, political, and economic forces impinging on the modern hospital organization and its pharmacy service programs.

632 Advanced Hospital Pharmacy Management. 3 lecture hours. 3 credits. The planning and development of a total program in institutional drug use control is stressed with emphasis on modern human and fiscal resource management theories and applications. Current management problems unique to institutional pharmacy practice are stressed.

690 Pharmacy Research Seminar. 1 lecture hour. 1 credit. Required of all graduate students in pharmacy.

691 Special Topics in Pharmacy. 1-4 lecture hours. 1-4 credits. Presentation of subject matter is by lectures, tutorial studies, and/or library assignments in selected areas of advanced study not available in other courses or as part of the research training.

697 Directed Research in Pharmacy. 1-15 credits. Research leading to the M.S., Pharm.D., or Ph.D. degree.



PART XI—School of Social Work

ADMINISTRATIVE OFFICERS

GRACE E. HARRIS

Dean

ROBERT L. SCHNEIDER

Assistant Dean

FLORENCE SEGAL

Director of Continuing Education

L. DIANE BERNARD

Director, Ph.D. Program in Social
Policy and Social Work

FACULTY

Adler, Martin D. *Professor* Ph.D., University of Pitts-
sburg; policy, mental health.

Barber, Alice L., *Associate Professor* M.S.W., Tulane
University; social work education, rural family prac-
tice.

Benda, Brent B., *Assistant Professor* Ph.D., University
of Wisconsin; juvenile delinquency, clinical social
work practice.

Bernard, L. Diane *Professor* Ph.D., Bryn Mawr Col-
lege; social work education, human behavior.

Beverly, David P. *Associate Professor* D.S.W.,
Catholic University of America; social work man-
power, social policy.

Biggerstaff, Marilyn, A. *Associate Professor* D.S.W.,
University of Southern California; social work man-
power, aging.

Bloom, Martin *Professor* Ph.D., University of
Michigan; evaluation methodology, primary preven-
tion.

Carlton, Thomas O. *Associate Professor* D.S.W.,
University of Pennsylvania; medical social work,
specialized curriculum development in health.

Falck, Hans S. *Professor* Ph.D., Syracuse University;
philosophy of science and social work methodology,
integration of social psychology and psychoanalytic
concepts.

Forbes, David C. *Assistant Professor* M.S.W., Adelphi
University; social welfare, organizations and com-
munity development.

Fortune, Anne E. *Associate Professor* Ph.D.,
University of Chicago; short term treatment, aging.

Green, Robert G. *Associate Professor* Ph.D., Virginia
Polytechnic Institute and State University; family
theory and therapy, marriage and divorce.

Harris, Grace E. *Professor and Dean* Ph.D., University
of Virginia; organizational theory, social administra-
tion and planning.

Hinchman, Madison G. *Assistant Professor* D.S.W.,
University of Southern California; crisis intervention,
children, adolescents and family.

Jimenez-Vazquez, Rosa *Assistant Professor* M.A.,
University of California at Los Angeles; social plann-
ing and community organization, Hispanic women.

Koerin, Beverly B. *Assistant Professor and Director,
Baccalaureate Program* Ph.D., University of
Virginia; social policy, family and child welfare.

Kolevzon, Michael S. *Associate Professor* D.S.W.,
University of California; family therapy, social work
education.

McSweeney, Edward A., *Associate Professor* Ph.D.,
University of South Carolina; social policy analysis,
social planning.

Miller, Jaclyn *Assistant Professor* Ph.D., University of
Texas; cognitive styles, social work education.

Moore, Mordean T. *Assistant Professor* Ph.D.,
Brandeis University; models of community develop-
ment, black community values, community mental
health.

Poole, Dennis L., *Assistant Professor* Ph.D., Brandeis
University; social welfare policy, planning and com-
munity development.

Roth, Edna F. *Professor* D.S.W., Smith College;
autism in children, family theory.

Russell, Dojelo C. *Professor* D.S.W., Catholic Uni-
versity of America; social work curriculum, faculty ad-
vising.

Saunders, David N. *Associate Professor* Ph.D., Bryn
Mawr College; alcohol and driving, alcohol and
youth.

Schneider, Robert L. *Associate Professor* D.S.W.,

- Tulane University; gerontology, social administration.
- Schrieberg, Charlotte S. *Associate Professor* M.S.S.W., Richmond Professional Institute; aging, social policy.
- Schwartz, Martin S. *Professor* Ed.D., Columbia University; clinical social work, mental health.
- Scotch, Bernard C. *Professor* Ph.D., Brandeis University; community development, professional manpower issues.
- Seaberg, James R. *Associate Professor* Ph.D., University of Wisconsin-Madison; child welfare, social services effectiveness.
- Segal, Florence Z. *Associate Professor* M.A., University of Chicago; human sexuality, part-time social work education.
- Singer, Mark J. *Assistant Professor* Ph.D., University of Illinois; spouse abuse, social work education, effects of fathering on child and adolescent development.
- Walker, Ruby C. *Assistant Professor* M.S.W., Richmond Professional Institute; family practice, the black aged.
- Wells, Mabel G. *Associate Professor* Ph.D., Bryn Mawr College; child welfare, family practice.
- Wompierski, Claire E. *Associate Professor* D.S.W., University of Pennsylvania; school social work research, evaluation research.

The School of Social Work was established in 1917 as the Richmond School of Social Work and Public Health, which later became the first unit of Richmond Professional Institute. The school developed initially in response to community manpower needs to work with World War I veterans and their social and health problems. Subsequent development of the school has expanded into all areas of human service.

With the creation of Virginia Commonwealth University in 1968, the School of Social Work was established as a unit of the university's Academic Campus. The Raleigh Building at 1001 West Franklin Street houses faculty offices, a student lounge, and conference rooms. The School of Social Work is the oldest school of its kind in the South.

Richmond provides a unique setting for social work education. The population of the metropolitan area is approximately 600,000 persons. As a community, Richmond is in a period of exciting economic and social growth, permitting varied opportunities for community study and field instruction. As the capital of Virginia, Richmond offers educational opportunities in many state government agencies concerned with the development and provision of social services. Proximity to Washington, D.C.,

allows additional practica opportunities with either federal agencies or with national organizations. The existence of a large number number of social agencies in the area permits students to participate in the delivery and development of a wide range of social services. The off-campus extended-time MSW program offers graduate education to students in diverse locales of the state.

PROFESSION OF SOCIAL WORK

Social work is a profession that assists people in the prevention and resolution of problems of human living. It provides services to those who seek more satisfying and productive lives, and helps communities to organize services to contribute to the welfare of all citizens. In addition to these traditional concerns, social workers are increasingly involved in the administration of direct human service programs, in the development of public policy, in research programs, and in teaching. Qualified social workers are in demand in every area of professional practice.

In order to achieve the profession's goals of human well-being and social justice, social workers provide a variety of services in many different organizations. Social work is usually practiced in social welfare agencies and in social work departments at host settings. Social workers with graduate degrees serve as faculty in universities offering social work programs. Social workers are needed to work with mentally ill, emotionally disturbed, delinquent, mentally retarded, physically ill, handicapped, and economically and socially deprived children and adults. They are sought for service in schools, courts, hospitals, clinics, occupational settings, and in agencies that seek to detect and prevent delinquency and child neglect.

Community centers, psychiatric and general hospitals, and service centers for the aged also seek qualified social workers and offer varied career opportunities. Equally challenging opportunities exist in public and private agencies that deal with problems of housing and urban renewal, public health, community mental health, social welfare planning and fund-raising, race relations, and many other concerns that become especially acute both in the changing

neighborhoods of large cities and in depressed rural and industrial areas.

Social work practice is designed to enrich the quality of life by enabling individuals, groups, and communities to achieve their greatest potential development. The overall aim of the School of Social Work at Virginia Commonwealth University is to provide professional education to meet these needs.

EDUCATIONAL PROGRAMS

The School of Social Work offers an undergraduate curriculum leading to the Bachelor of Social Work degree, a graduate professional curriculum leading to a Master of Social Work degree, and a Ph.D. program in social policy and social work.

BACCALAUREATE SOCIAL WORK PROGRAM

The School of Social Work offers a four-year program leading to a Bachelor of Social Work degree.

The B.S.W. program is accredited by the Commission on Accreditation of the Council on Social Work Education. The objectives of the baccalaureate program are to prepare students for beginning social work practice and graduate social work education. A description of the baccalaureate program may be found in the *Virginia Commonwealth University Undergraduate Bulletin*. A copy of the bulletin may be obtained by writing to University Enrollment Services, Undergraduate Admissions, Virginia Commonwealth University, 821 West Franklin Street, Richmond, VA 23284.

MASTER OF SOCIAL WORK PROGRAM

At Virginia Commonwealth University, a graduate professional curriculum accredited by the Commission on Accreditation of the Council on Social Work Education and leading to the Master of Social Work degree, is offered through the School of Social Work. Changing manpower needs in the social work field indicate that students at the graduate level need to be prepared as specialists in a particular field of social service delivery. The recent expansion of knowledge in the human sciences, as well as the complexity of social service delivery systems, also require that students concen-

trate in depth in one area to achieve the knowledge and skill necessary to practice in these intricate systems.

The curriculum of the Master of Social Work program is designed to prepare social workers who are able to demonstrate

1. Specialized knowledge and skill in the provision of services within a major social services delivery system (adult and juvenile justice, family/public social services, health, mental health/mental retardation).
2. Competence in one method of social work practice (social casework, social group work, social planning, social work administration); beginning knowledge and skill in a second, related method of practice; and knowledge and appreciation of other methods of practice.
3. Knowledge of the profession and its evolution; sensitivity to critical professional issues; and commitment to its purposes, values, and ethics.
4. Ability to assess problems confronted in practice through scientifically-grounded procedures.
5. Commitment and ability to participate in the development of strategies and policies and to ameliorate social problems.
6. Ability to integrate and use in practice, knowledge of individual behavior and social structure.
7. Understanding of the interdependence of professional disciplines and skill in collaboration with others to achieve welfare objectives.
8. Self-awareness; self-discipline; and accountability to clients, to the profession, and to society.
9. Ability to distinguish between what is known and what is not known and commitment to continued learning and contribution to knowledge.
10. Appreciation of the contributions to society of cultural and ethnic diversity and ability to identify and counteract discrimination.

ADMISSION TO MASTER'S DEGREE PROGRAMS

Students interested in full-time study are admitted to the M.S.W. program in the fall

of each year. Part-time students are admitted throughout the year. It is advisable for prospective students to apply as early as possible during the academic year preceding anticipated enrollment. Ordinarily, firm decisions in admissions are concluded by mid-May.

Admission Requirements

Each applicant for admission must hold a bachelor's degree from a college or university approved by the appropriate regional accrediting body. Neither the content nor the major subjects of the undergraduate program is rigidly prescribed. It is desirable, however, for applicants to have studied some of the following subjects: history, political science, economics, cultural anthropology, sociology, biology, psychology, and English.

The school has particular interest in the recruitment and admission of minority group students. Special recruitment efforts have been developed toward this end.

The minimum academic requirement for eligibility for admission is the attainment of a 2.7 ("B-") grade point average on a 4.0 scale for the last 60 hours of academic work. Exceptions may be made for practitioners who have received the baccalaureate degree at least five years previously and who obtained a 2.5 grade-point average, or for students with unusual qualifications.

Within the policies established by the University Graduate Council, determination of eligibility for admission is made by a school admissions committee which considers scholarship ability, academic background, work experience, if any, and personal qualities that indicate potential to meet the requirements of the social work profession.

The same admission procedures apply to part-time students or returning or transfer applicants from other universities.

At the time of notification of admission, the full-time applicant is required to pay a non-refundable deposit of \$50. This fee is applicable toward university fees. Application forms are available from University Enrollment Services, Graduate Admissions, Virginia Commonwealth University, 821 West Franklin Street, Richmond, VA 23284.

MASTER OF SOCIAL WORK DEGREE REQUIREMENTS

The M.S.W. degree requires the completion of 60 credits of graduate study. The first 30 credits may be taken in one academic year on a full-time basis or may be extended to a maximum of four years on a part-time basis. The first 30 credits represent the foundation year of the program and covers major concepts in human behavior, social policy, ethnic and cultural diversity and the major method selected by the students, as well as other interventive methods. Students are grouped by areas of specialization in the second year. This year is designed for the study of more specific knowledge of the social service delivery system as it relates to human behavior, social policy, research, and practice. Students are usually in a practicum two days each week during the foundation curriculum and three days each week during the second academic year.

Field Instruction

Field instruction is an integral part of the curriculum of the School of Social Work. Under professional supervision, the student integrates into practice the knowledge, attitudes, and skills studied in the total curriculum. Field Instruction placements in the four specialized service delivery systems are available in Richmond and in other Virginia communities. Included are juvenile learning centers, adult correctional facilities, family service agencies, community mental health centers, hospitals, schools, treatment centers for children, social service bureaus, alcohol services, and planning agencies.

Students may be assigned to placements which are a distance from Richmond (e.g. Norfolk, Washington, D.C., Staunton). Arrangements for travel and accommodations must be made by students at their own expense. Students who reside in communities outside of Richmond may request field placement there.

Academic Status

A minimum of one year of full-time study, a minimum grade-point average of 3.0 ("B") on a 4.0 scale over the entire period of study, a total of 60 credits in the two-year or 39 credits in the advanced-standing pro-

gram, and demonstrated ability in social work practice are required for graduation with a Master of Social Work degree.

Students must have completed the 30 credits of the first year curriculum and have a 3.0 average to continue into the second year.

Students with less than a 3.0 average may apply to return after an absence of one year.

Students with less than a 3.0 average at the end of the first year, who take courses in the Summer Sessions and raise the average to 3.0, may petition for return without a year's absence. However, each student's situation will be considered individually and a student may still be required to take a leave of absence for one year.

Students who receive a grade of "C" or below in six credits of course work anytime during the first 30 credits of study or a grade of "C" or below in 20 percent or more cumulatively in succeeding semesters will be dropped automatically from the program without regard to grade-point average (GPA).

Students who receive a "C" (2.0) in the first semester of field instruction may continue in the program. In each subsequent semester, however, a minimum of "B" (3.0) in field instruction will be required for successful completion of the MSW Program.

At all times, students must show acceptable professional behavior to be retained in the graduate program.

Residency Policy

During the last 30 semester hours of credit of the Master of Social Work degree, students are required to take a minimum of nine credit hours during consecutive fall and spring semesters.

PART-TIME MASTER OF SOCIAL WORK PROGRAM

The school welcomes qualified persons who seek to participate in its part-time program. Part-time students are admitted throughout the year and must meet the same requirements for admission as full-time students. Applicants are expected to plan the completion of all requirements for the degree program. Students who enter the program may take the first 30 credits required for a Master of Social Work degree on a part-time basis. The time limit for a graduate

degree will not extend beyond a period of seven years which, *at the master's level includes five years* with two possible one-year extensions, which may be granted, upon petition, by the dean of the School of Graduate Studies.

Most courses required in the part-time program are available through the VCU evening and summer sessions. Off-campus credit courses are also provided in Bristol, Fairfax, Harrisonburg, Lynchburg, and Roanoke, Virginia. Part-time students may register for day courses, if space is available.

ADVANCED STANDING PROGRAM

An advanced standing program is available to a selected group of students. This program leads to a Master of Social Work degree upon completion of a minimum of 39 credit hours which can be completed in a summer session followed by an academic year with a concurrent field practicum.

Each student's curriculum is individually planned to recognize previous social work education and to insure a balanced graduate program.

Admission to Advanced Standing Program

Each applicant for admission to be advanced standing program must hold a bachelor's degree from an undergraduate social work program accredited by the Council on Social Work Education. This program usually begins in early June, continues through the summer, and culminates with graduation the following May. Applications should be submitted in the fall preceeding the intended cycle of attendance. Ordinarily admission decisions are concluded by March. The minimum academic requirement for consideration for admission to the advanced standing of a 3.0 ("B") grade-point average for the last 60 hours of academic work.

For information and applications, please write to University Enrollment Services, Graduate Admissions, Virginia Commonwealth University, 821 West Franklin Street, Richmond, VA 23284.

COOPERATIVE PROGRAM WITH PRESBYTERIAN SCHOOL OF CHRISTIAN EDUCATION (PSCE)

In this program, the first year of study is completed at PSCE and the second year at

the School of Social Work in order to meet the requirements for the degree of Master of Arts and Christian Education. Students may spend an additional year at the School of Social Work and meet the requirements necessary for the Master of Social Work degree.

Applications for admissions must be made to each institution separately. Those interested should write both to University Enrollment Services, Graduate Admissions, Virginia Commonwealth University, 821 West Franklin Street, Richmond, VA 23284, and Director of Admissions, PCSE, 1205 Palmyra Avenue, Richmond, VA 23227.

DUAL DEGREE PROGRAM IN LAW AND SOCIAL WORK

Through a cooperative arrangement with the T.C. Williams Law School, selected students in either school may pursue a four-year curriculum of graduate study leading to the degrees of Master of Social Work and Juris Doctor. The program is established in recognition of the role of public law in social and economic life.

The purpose of the dual degree program is to prepare professionals who will be versed in the values, knowledge, and skills of both fields, bringing an integrated base of competency to the resolution of human and social problems.

Applicants must successfully meet the admissions requirements of both schools, and upon admission will be assigned an advisor in each school. Students in the dual degree program may begin the course work in either school, with the sequence of courses being determined by the point of entry.

The normal time required for completion of the integrated four-year curriculum is one academic year less than if each degree were taken separately. Elective courses will enable students to select areas in law and in social work which meet their particular interests. Interested persons should contact the Admissions Office of the T.C. Williams Law School, University of Richmond, VA 23173 and University Enrollment Services, Graduate Admissions, Virginia Commonwealth University, 821 West Franklin Street, Richmond, VA 23284.

SOCIAL WORK EDUCATOR PROGRAM

A second-year concentration is offered to selected students who have specific interests in preparation for teaching careers at the community college or baccalaureate level of education for social work. The program is open to students who demonstrate substantial scholarly attainment and effective social work practice skills during the first year of graduate study. Students admitted to this concentration may have specialized in any of the methods described elsewhere during their first year of study. Students in this concentration complete all courses required for system and method specialization plus additional courses specific to teaching and social work education. During the fourth semester students complete a practicum in teaching in which they carry responsibility for an undergraduate course in social work. The program is not offered every year. For further information, please contact the Office of the Dean of the School of Social Work.

SCHOOL SOCIAL WORK PROGRAM

Through a collaborative program with the School of Education at the university, students may meet standards for certification as school social workers, in addition to meeting all requirements for the Master of Social Work degree. Students interested in certification as school social workers should contact their advisors during the first semester of their program and may complete the requirements within 60 credits.

SYSTEM OF SPECIALIZATION—MASTER OF SOCIAL WORK 1983-84

All Master of Social Work students are required to concentrate their studies within one social service delivery system and in one major method of social work practice. Social service delivery system concentrations are available in four areas: the adult and juvenile justice system, health system, family public social services system, and mental health and mental retardation system. Students are required to select one major method from among social casework, social group work, social planning, or social work

administration. Each concentration may not be offered every year.

At the time of admission students are required to choose a major method of social work practice. Selection of a social service delivery system takes place before entry into the second year as a full-time student.

SOCIAL SERVICE DELIVERY SYSTEMS

Adult and Juvenile Justice System. The justice system is charged by society to deal with behavioral deviance from sociolegal norms and standards. It is concerned with adults charged with criminal offenses and juveniles charged with either criminal or status offenses. The system encompasses a variety of settings which relate to offenders from the point of arrest or petition through final discharge from the system. These settings include courts, juvenile learning centers, adult correctional facilities, agencies charged with administering probation and parole services, halfway houses, state departments of corrections and youth services, and planning agencies such as Law Enforcement Assistance Administration. Social Workers may work in the system as direct service workers, supervisors, staff developers, program evaluators, planners, or administrators.

Family/Public Social Services System. The family as a system is defined by the functions it performs. As the primary social and emotional unit in society, the family functions to meet the changing needs of its members of affection, subsistence, socialization, and in the utilization of other social institutions. In this context, public and private social agencies provide economic supports and social services to prevent family breakdown or destitution, to maximize effective social functioning of the family, and to meet special needs of persons deprived of family membership. These public and private agencies include agencies which meet basic family welfare needs for income, housing, employment, and education; family agencies which clearly identify the family as a unit of service and provide counseling to individuals and families; agencies which deal primarily with children and youth affected by family

breakdown or dissolution; agencies which offer supportive services to families with aged members or to individual aged persons; and agencies which interact with larger divisions of society to identify family needs, plan and develop services, and act to promote equitable distribution of political, social, and economic resources which affect the quality of family life. Social workers provide counseling services to individuals and families. They also work as supervisors of direct service workers, staff developers, family life educators, consultants, administrators, social planners, and program evaluators.

Health System. Focus in the health system is on a health-to-illness continuum. The maintenance of health is a basic need of all individuals and illness is a major social problem which can disturb patterns of individual and family functioning, produce emotional strain for patients and their families, and cause economic and social distress. The health system is concerned with prevention of illness, care for those who become ill, and restoration of sick and disabled persons to maximum health and social functioning. Health related agencies include general and special hospitals and clinics; health departments on state and local levels; health planning agencies; community planning centers, child development centers; nursing and convalescent homes; family planning, abortion, and sex counseling programs; health maintenance organizations; health advocacy and consumer agencies; and vocational rehabilitation programs. As part of a multidisciplinary team social workers provide direct social services to patients and their families or serve as consultants, educators, administrators, planners, or program evaluators.

Mental Health/Mental Retardation System. The mental health and mental retardation system has responsibility for care and treatment of persons with retardation and emotional impairment and for prevention of mental retardation and mental illness. Both of these conditions are major social problems which impose severe emotional, social, and financial burdens upon individuals, their families, and their communities. Mental health organizations include state institutions for the mentally ill and/or the mentally retarded; community

mental health centers; and public and private hospitals, mental health clinics, child guidance clinics, rehabilitation centers, half-way houses, and sheltered workshops. Persons served may manifest relatively mild emotional problems to severe psychosis, mild to severe mental impairment, and either chronic or acute illness. As a part of a multi-disciplinary team, social workers provide direct social services to patients/clients and their families or serve as consultants, supervisors, planners, administrators, or program evaluators in the organizations and agencies that the system comprises.

SOCIAL WORK METHODS

Social Casework. Casework as a method contributes to individual and family development, prevention of social impairment, restoration of effective social functioning, and realization of potential for responsible and satisfying social living. Social casework centers on the establishment and utilization of a helping relationship, unique assessment of the individual's and family's problems within the context of their situation, treatment, termination, referral and transfers, interventions on behalf of clients, and contributions to the client's ability to achieve his own and society's purposes. Students selecting social casework as their major method will be required to take social group work as their secondary method.

Social Group Work. Social group work is a method of social work practice that aims to help people help each other in the enhancement of their social functioning and the achievement of self-actualization through the use of group experience and to help groups function effectively and responsibly in the fulfillment of the purposes. The social group work method is used in services that help restore effective social functioning, prevent social impairment, and develop optimum individual potential in social relations. The curriculum covers the study of the various aspects of group life; the mean-

ings of group experiences for the group as a whole and for the individual members; and methods of facilitating the process of group and individual development. Students selecting social group work as their major method will be required to take social casework as their secondary method.

Social Planning. Social planning as a major method emphasizes problem-solving skill in the sense of creating, initiating, and maintaining community institutions and services that can effectively provide for the social environmental needs of the public being served. The social planning includes the study of the various organizations that make up the social welfare system, methods, and processes of social planning. Among these are methods of organizing people to achieve community objectives, defining the planning task, selection of goals and priorities, decision-making, coordination of services, and change strategies. Those selecting social planning as a major social work method will be required to select social work administration as their secondary method.

Social Work Administration. Students electing social work administration as a major method focus upon the assumption of responsibilities as social service agency administrators or subadministrators in either public or private agencies. The emphasis is on the organizational problems that confront administrators in relation to professional mandates and business principles involved in meeting the overall social work professional imperative, that is, the efficient use of social service organization and personnel in the resolution of social problems at the individual or community level. Students selecting administration as their major method will be required to take social planning as their secondary method. Admission to social work administration is limited to those applicants with a minimum of three years' experience in the social service field or some equivalent.

COURSE REQUIREMENTS FOR THE MASTER OF SOCIAL WORK DEGREE

Specific courses required of students may differ depending upon the choice of concentration in a social service delivery system and/or the choice of a major method of social work practice. The following courses and semester outlines will indicate the specific courses according to the various delivery systems or major methods.

TWO YEAR PROGRAM**First Year, Fall Semester**

Individual in Society, SLW601	All Students	3 Credits
Foundations of Social Policy, SLW602	All Students	3 Credits
Methods I Course	By Method	3 Credits
Fundamentals of Social Casework, SLW604.	All Casework Majors	
Fundamentals of Social Group Work, SLW605	All Group Work Majors	
Fundamentals of Social Planning, SLW606 ..	All Social Planning Majors	
Fundamentals of Social Services Administration, SLW607	All Administration Majors	
Secondary Method Course	By Method	3 Credits
Fundamentals of Social Casework, SLW604.	All Social Group Work Majors	
Fundamentals of Social Group Work, SLW605	All Casework Majors	
Fundamentals of Social Planning, SLW606 ..	All Administration Majors	
Fundamentals of Social Services Administration, SLW607	All Social Planning Majors	
Field Instruction I, SLW693	All Students	3 Credits
	TOTAL	15 Credits

First Year, Spring Semester

Black Experience/Racism, SLW650	All Students	3 Credits
Social Structure and Human Behavior, SLW651 (Prerequisite SLW601)	All Students	3 Credits
Methods II Course	By Method	3 Credits
Social Casework II, SLW654 (Prerequisite SLW604)	All Casework Majors	
Social Group Work II, SLW655 (Prerequisite SLW605)	All Group Work Majors	
Social Planning II, SLW656 (Prerequisite SLW606)	All Social Planning Majors	
Administration II, SLW657 (Prerequisite SLW607)	All Administration Majors	
Method Course	By Method	3 Credits
Social Work Practice in Communities and Organizations, SLW666	All Casework and Group Work Majors	
Social Work Practice with Individuals and Groups, SLW664	All Social Planning and Administration Majors	
Field Instruction II, SLW694 (Prerequisite SLW693)	All Students	3 Credits
	TOTAL	15 Credits

Second Year, Fall Semester

Methods III	By Method	3 Credits
Casework III—Family Welfare, SLW714 (Prerequisite SLW604-654)	All Family/Welfare Casework Majors	
Casework III—Health, SLW724 (Prerequisite SLW604-654)	All Health Casework Majors	
Casework III—Justice, SLW734 (Prerequisite SLW604-654)	All Adult and Juvenile Justice Casework Majors	
Casework III—MH/MR, SLW744 (Prerequisite SLW604-654)	All MH/MR Casework Majors	
Social Group Work III, SLW755 (Prerequisite SLW605-655)	All Group Work Majors	
Social Planning III, SLW756 (Prerequisite SLW606-656)	All Social Planning Majors	
Administration III, SLW757 (Prerequisite SLW607-657)	All Administration Majors	
Social Policy Course (Prerequisite SLW602)		3 Credits
Social Welfare Policies and Services for Individuals and Families, SLW712	All Family Service and Welfare Majors	

¹First year courses subject to change in fall 1983.

Social Policy and Health Care, SLW722	All Health Majors	
Adult and Juvenile Justice Policies and Programs, SLW732	All Adult and Juvenile Justice Majors	
MH/MR Policy Services, SLW742	All MH/MR Majors	
Human Behavior Course (Prerequisite SLW601)		3 Credits
Dynamics of the Family, SLW711	All Family Service and Welfare Majors	
Physical Illness and Handicaps, SLW721	All Health Majors	
Person in Justice System, SLW731	All Adult and Juvenile Justice Majors	
Emotional Disorders, SLW741	All MH/MR Majors	
Foundation of Social Research, SLW 703	All Students	3 Credits
Field Instruction III, SLW793 (Prerequisite SLW693-694)	All Students By System	3 Credits
	TOTAL	15 Credits

Second Year, Spring Semester

Field Research, SLW713, 723, 733, or 743 (Prerequisite SLW703)	All Students	3 Credits
Elective in System	All Students	3 Credits
Electives (2)	All Students	6 Credits
Field Instruction IV, SLW794 (Prerequisite SLW693-694-793)	All Students by System	3 Credits
	TOTAL	15 Credits

Ph.D. Program in Social Policy and Social Work

The doctoral program in social policy and social work is designed to prepare persons in the development, implementation, and evaluation of programs and policies concerned with various social problems and to prepare social work educators well grounded in research, theory, and teaching methods.

Each student is expected to choose one of the following areas of specialization: social policy analysis, applied social research, program administration, or social work education.

ADMISSION TO THE PH.D. PROGRAM

Applicants to the program must have an earned master's degree in social work or a related discipline. In addition, applicants who wish to specialize in clinical social work education (a subspecialty of social work education) must have had the equivalent of a minimum of three years of clinical social work experience. The Graduate Record Examination Aptitude Test is required of all applicants. A combined score of 1000 on the verbal and quantitative sections is expected.

Applicants for full-and part-time study will be judged by the same criteria. While it is possible to combine a limited amount of course work with outside employment, students are expected to commit themselves

to one year of full-time study prior to beginning work on a dissertation.

Students interested in testing their capacity for doctoral work, or those whose application materials have not as yet been completed for review by the Admissions Committee, may be admitted as special students on a conditional basis. Students admitted under this status may take up to six credits and must be formally admitted by the end of the semester in which they enrolled if credit is to be applied to the doctoral degree. Satisfactory performance as a special student does not assure admission as a regular degree-seeking student.

For application materials and additional information, write to the Doctoral Program in Social Policy and Social Work, 1001 West Franklin Street, Virginia Commonwealth University, Richmond, VA 23284.

REQUIREMENTS FOR THE PH.D.

DEGREE

A minimum of 36 credit hours of course work beyond the master's degree plus a minimum of 18 credit hours of dissertation research is required. Up to six credit hours may be granted for courses completed in a Ph.D. program at another university. There is no foreign language requirement. Other requirements are detailed below.

1. **Core Curriculum.** The core curriculum which is required of all students

consists of the following courses (18 credits):

SPW 701-702 Research Methods I and II

SPW 706 Social Theory and Public Policy

SPW 708 Behavioral Science Theory for Social Work Practice

SPW 710 Social Thought and Social Policy

SPW 715 Social Work Practice Theory

SPW 716 Contemporary Issues in Social Work Education

A graduate level course in social statistics, is required. It may be taken concurrently with SPW 701, but will not be counted toward the 36 credits required for the degree.

Students are expected to complete the core curriculum before moving on to more specialized course work. Full-time students would ordinarily complete the core in their first year.

2. **Specialization.** The specialization consists of at least 18 hours of specialized courses designed to prepare the student for a career in one of the four specialty areas (social policy analysis, applied social research, program administration, or social work education). In collaboration with a faculty advisor, each student will plan a program of study to gain intensive knowledge of at least one problem area. In addition to seminars and courses offered by the program, students are encouraged to enroll in appropriate courses in other schools and departments of the university, with approval of their advisor.

3. **Internship and Practicum.** Students without formal experience in human service programs will be required to complete an internship under faculty supervision in an appropriate agency setting. Students in the social work education concentration will be expected to complete a teaching practicum. Those in social work education may also be required to complete an individually designed practicum.

4. **Directed Research.** Students will be expected to participate in applied research projects under faculty

supervision before they start work on their dissertations. These projects will provide students with practical experience in research on topics related to their areas of interest.

5. **Admission to Candidacy.** Students are admitted to candidacy when their Graduate Advisory Committee certifies that all pre-dissertation degree requirements, including qualifying examinations, have been satisfied, and that students are prepared to proceed to the dissertation.

6. **Dissertation.** After admission to candidacy students will proceed to propose, complete, and defend their dissertation. Students are required to maintain continuous enrollment of at least one credit every semester (excluding summer) until completion of the dissertation requirement. The dissertation must represent independent research and should contain original material, results, and interpretations.

GENERAL INFORMATION

Financial Assistance

Although financial assistance is limited, some funds are available. No prospective student should refrain from seeking admission to the school because of financial reasons alone.

Traineeships. States, through their departments of public welfare, mental health, corrections, and rehabilitation may have programs to assist individuals in securing professional education. They may be consulted locally.

The school also administers and awards federal and university traineeships for qualified students. However, since funds available through the School of Social Work are limited, applicants are *strongly urged* to seek other sources to finance their education.

Federally Guaranteed Loans. See "Student Financial Assistance" in Part I of this bulletin.

H. H. Hibbs Loan Fund. The H. H. Hibbs Loan Fund was established by the School of Social Work Alumni Association

for short-term emergency needs. Alumni, faculty, and friends of the school are encouraged to contribute to it. Enrolled full-time students who wish to apply for a loan should discuss this with their faculty advisor and the assistant dean.

Research and Teaching Assistantships. Research and teaching assistants may be available to doctoral students. Additional information is available from the director of the Ph.D. program.

WAIVERS

Waivers of required courses may be granted without credit. Students seeking the waiver of a course should petition the chairman of the particular M.S.W. curriculum system in which the course for which they seek waiver is offered or petition the director of the Ph.D. program. After an evaluation, students will be informed of decisions to grant or refuse waivers.

Students seeking the transfer of graduate credits from other accredited universities or from departments of VCU must contact the assistant dean in order to follow the proper procedures.

Additional policies and procedures governing the educational programs of the School of Social Work may be found in the School of Social Work Student Handbook which is distributed at the time of matriculation.

CONTINUING EDUCATION PROGRAM

The Department of Continuing Education in the School of Social Work offers a variety of lectures, institutes, and workshops as part of the school's commitment to enhance social work practice and broaden educational experiences for students, social workers, field instructors, and others in social service delivery systems. State, regional, and local agencies and institutions frequently identify educational and training needs in content or skill areas for selected staff members. The Department of Continuing Education, through contractual arrangements, contributes expertise in designing and implementing short-term training courses.

The school offers continuing education units (CEUs) to participants through the

Division of Continuing Studies and Public Service at Virginia Commonwealth University. In addition to existing university funds, grants to the school have been available from the National Institute of Mental Health; Council on Social Work Education; Virginia Department of Mental Health and Mental Retardation; State Office on Volunteerism; Virginia Division of Drug Abuse Control; Virginia Department of Social Services; U.S. Department of Health and Human Resources; U.S. Social and Rehabilitation Service; Council on Criminal Justice of the Virginia Division of Justice and Crime Prevention which support continuing education offerings.

Offerings of the Department of Continuing Education are planned throughout the year and are available throughout Virginia. For further information about specific continuing education courses, inquiry should be addressed to the director of continuing education, School of Social Work, Virginia Commonwealth University, 1001 West Franklin Street, Richmond, VA 23284.

ALUMNI ASSOCIATION

The School of Social Work Alumni Association actively supports the program of the school with the president serving as a member of the Advisory Board. The association established the H. H. Hibbs Loan Fund and continues to contribute to the support of it. The Annual Spring Social Work Symposium is sponsored by the association. Meetings are held quarterly with the spring meeting being held during the annual conference of the Virginia Council on Social Welfare.

Alumni Association Officers, 1982-83

Sherry Peterson
President
Frank A. Sansone
Vice-President
Michael J. Mastropaolo
Secretary
Judith Minter
Treasurer

MASTER OF SOCIAL WORK STUDENT ASSOCIATION

The Student Association is the organization of students enrolled in the school,

established for the purposes of facilitating communication among students and between the student body and the school. It provides a means by which student concerns and ideas can be formulated and acted upon. Also, it enables students to conduct a variety of social and other activities throughout the year.

This organization plays a vital role in the educational process. Student contributions to the governance and curriculum of the school are of value to both the institution and the students. Participation in the decision making process is accomplished through student representation on committees. The faculty and the students work closely together throughout the year to meet the needs of graduate social work education. Students participate as full members of many committees within the school.

MASTER OF SOCIAL WORK Student Association Officers 1983-84

Karen D. Frazier
President
Lee Hubert
Vice-President
Sheila Montgomery
Secretary
Cecilia Pettis
Treasurer
William Stanley
Coordinator of Student Life

Black Student Association

The Black Student Association was established to create and maintain an atmosphere of unity and brotherhood among black students in the School of Social Work. It serves to assist the students in their personal and professional growth and development. Membership in this organization helps students to develop a keen awareness of the acute needs of the black community and the active role that must be assumed by the dedicated black professional social worker in promoting the general welfare of black citizens. To attain these goals, the organization utilizes the educational process and related experiences of students at the school and in field work. Students are encouraged to participate in all phases of the academic environment. Black students are expected to maintain membership in and are members of the MSW Student Association of the school.

Black Student Association Officers 1982-83

Belva Kennedy
President
Lisa Smith
Vice-President
Warra Foster
Secretary
Patricia Hill
Treasurer
Joan Carter
Executive Committee Representative

DOCTORAL STUDENT ASSOCIATION

The Doctoral Student Association meets on a regular monthly basis, and students participate actively in the governance of the doctoral program and School of Social Work. The association functions with elected members to all standing committees within the school.

MASTERS DEGREE COURSES IN SOCIAL WORK (SLW)

601 Individual in Society. 3 credits. Theoretical perspectives on human growth and development. Human behavior as a continuum from the so-called normal to the most disordered. Interrelationships between the psychological, physical-biological, and sociological forces that shape the formation of the self. The variety of ways in which growth and development proceed, particularly in relation to racial, ethnic, and cultural differences. Impact of social forces such as group membership, community life style, and institutional racism on human behavior.

602 Foundations of Social Policy. 3 credits. Basic knowledge about policy development and assessment and a foundation for analysis of specialized social service delivery systems. Policy development and evaluation as structured by evolving definitions of human rights; the law as it defines rights and duties of individuals, social agencies, and society; values as definers of social problems and policies; and resources as opportunities and constraints, including money, manpower, facilities, and effects of institutional racism. Skill in application of selected models for analysis of current social welfare policies and programs.

604 Fundamentals of Social Casework. 3 credits. Introduction to basic theories, principles, and skills of social casework practice and processes: the giving and taking of help; the establishment and utilization of the casework relationship; referral; intake and diagnostic assessment; treatment; transfers and termination; interventions on behalf of clients; and the limits of social casework. Examination of past life experiences and current stresses in relation to identification of the unique characteristics of each individual and assessment of the individual's problems within the context of general principles. Special emphasis on the professional use of self, the common core of social casework practice, and the person-in-situation.

605 Foundations of Social Group Work. 3 credits. The values, objectives, and principles of social group work practice. All major aspects of group life, with emphasis on the purposes, content, and forms of various group experiences. The meanings of these experiences for the group as a whole and for the individual members. Special emphasis on the beginning process in working with groups. Introductions to knowledge and skill in the use of program content in working with groups. The worker's role in facilitating the processes of group and individual development.

606 Fundamentals of Social Planning. 3 credits. Social planning by community decision-making organizations (welfare organizations, city, regional, state, and federal planning and service agencies); methods of planning; consumer advocacy; defining the planning task; selection of goals and priorities; decision-making; interorganizational exchange; coordination of services; planning problems in developing specialized services; and change strategies for racial and ethnic minorities. Consumer participation in the planning process; role of the worker in alternative methods of community organization practice.

607 Fundamentals of Social Work Administration. 3 credits. Introduction to administration in social work settings. Knowledge and research about leadership theory. Directing techniques. Communication networks. Organizational representation. Systems analysis. Change-in-organization models. Authority and professional function in bureaucratic settings. Motivation theory.

650 Racism and the Black Experience. 3 credits. Examination of the experience of blacks in the context of American society as a framework for analysis and understanding of racism as socially-determined phenomenon. Emphasis on understanding of and sensitivity to institutional structures and individual behaviors included in the concept of racism. Analysis of the influence of race and ethnicity on the various processes in which clients, social workers, and social agencies engage. Development of indices of racism and strategies for its elimination.

651 Social Structure and Human Behavior. 3 credits. The behavior of the individual as a member of a community with an emphasis on community functions and institutions as they impact on the person. Concepts of socialization, the network of social systems, social control, social participation, social role, mutual support, and social stratification. Examination of variations in communities in relation to such factors as race, income, social status, religion, and ethnicity as a means of understanding the diverse ways in which a community's activities are manifested in its institutional patterns and how these differences affect behavior.

654 Social Casework II. 3 credits. Reexamination in depth and breadth of the helping process with special emphasis on practice settings and human behavior concepts relevant to social service delivery system specializations. In-depth examination of problems clients present and subsequent refinement of casework intervention with emphasis on the influence of biopsychosocial factors, illness and disease, family dynamics, and ethnicity in practice. Crisis intervention and short-term treatment.

655 Social Group Work II. 3 credits. The group's operational patterns and processes, the worker's role in enabling the group to achieve its purposes, including analysis of the processes of group formation, group goal-achieving, group relations, group development, and group termination. Differential assessment of target populations and racial ethnic factors. The use of program content in the goal-achieving process. Small group theory and research related to social group work practice.

656 Social Planning II. 3 credits. Rational, political, and value considerations related to feasible planning for social change. Problem-solving activity in relation to the design, funding, and evaluation of social service delivery systems. Fund-raising, grantsmanship, determination of need, Program Evaluation Review Technique system, cost comparison analysis, program design, and program evaluation.

657 Administration II. 3 credits. Design of control systems. Budgeting processes. Program evaluation and research. Organizational planning steps. Inter- and intraorganizational coordination. Negotiation skills. Conflict resolution. Goal setting. Roles of administrators in human resources settings.

661 Profession of Social Work. 3 credits. Sociology of social work and its uniqueness as a profession. Changing purposes in response to changing social conditions and needs. Viability of its values and ethics within its philosophical base. Nature of professional identity and responsibility. Issues of accountability, professional commitment, social responsibility, racism, manpower, advocacy, and social change. Trends in education for social work.

664 Social Work Practice with Individuals and Groups. 3 credits. Introduction to basic theories and principles of social casework and social group work practice and processes. Emphasis on utilization in planning and organizational contexts. The worker's role in facilitating group and individual development. The establishment and utilization of the helping relationship. The components of casework processes and the role of the worker. All major aspects of group life, with emphasis on the purpose, content, and forms of various group experiences.

666 Social Work Practice in Communities and Organizations. 3 credits. Knowledge of the dynamics of organizational behavior and structures as they relate to effective service delivery. Beginning skill in applying various administrative concepts, e.g., supervision, communication, delegation, division of labor, and staff development, to direct service agencies. Skill in utilizing social planning concepts, e.g., assessment of needs, interorganizational exchange, coordination of services, and funding. Knowledge of social planning processes by community organizations and alternative methods of achieving social policy goals. Emphasis on the importance of utilizing community resources to enhance the functioning of the direct service agency and the community itself.

691 Topical Seminar. 3 credits. A seminar on current, specialized areas of interest to social work. Content offered will be reflective of current issues in the field. Particular topics for study in any one semester will be

determined jointly by the students and the faculty instructor.

692 Independent Study. 1-4 credits. The student will be required to submit a proposal for investigating some area or problem in social work not ordinarily included in the regular social work curriculum. The results of the student's study will be presented in a report. Open with faculty approval. A maximum of four independent study courses may be included in a student's educational program.

693 Field Instruction I. 3 credits. Integration and application of core course and field learning as an accountable representative of a social agency. Basic knowledge, attitudes, and skills necessary for responsible professional social work practice in a selected service delivery system. Educational emphasis on the active use of content from all areas of the curriculum.

694 Field Instruction II. 3 credits. Continuation of field instruction and learning as an accountable representative of a social agency, with emphasis on the integration and active use of content from all areas of the curriculum. Emphasis on the integration and application of system specific knowledge and attitudes and on the development of skills required for professional social work practice in a selected service delivery system.

695 Block Field Instruction. (for part-time students only) 6 credits. Integration and application of core and system specific content as an accountable representative of a social agency. Knowledge, attitudes, and skills necessary for responsible professional practice in a selected service delivery system. Educational emphasis on the active use of content from all areas of the curriculum.

703 Foundations of Social Research. 3 credits. Use of scientific method in the development of theory and practice for social work. Examination of the methodology of scientific investigation, including technologies of research design, probability theory, and statistical inference. Information storage and retrieval systems and scientific communication skills for information dissemination and consumption. Problem identification, hypothesis testing, and evaluation of effectiveness of alternatives. Review and testing of research efforts for application and communication.

711 Dynamics of the Family. 3 credits. Definition and function of the family as a biological-sociopsychological unit in American society. Individual growth and development in family life. Significance of family in socialization and nurturing. Development of family style. Impact on the person of family interactions. Impact of changing male/female roles, sexual mores, and new forms of family experience. Diversity of family life in terms of racial and ethnic differences. Interaction of the family with other social institutions, including public welfare agencies, schools, and agencies offering leisure time activities. Impact of social and community processes on individual and family functioning.

712 Social Welfare Policy and Services for Individuals and Families. 3 credits. Analysis of policy, program, and service developments in the public and private

sectors which impact on the lives of individuals and families. Legal bases and current issues relevant to system components in the public and private sectors; auspices, funding patterns, and resource distribution. Policy development as structured by the shifting context of American values and philosophy; economic needs and opportunities; employment, income, and living standards; the roles of social, economic, and political institutions; and the incidence and impact of racism and social factionalism.

713 Research in the Family Public Social Services System. 3 credits. Prerequisite: SLW 703 Examination of alternate designs available for research in agencies and programs which serve the family group. Evaluation of direct service and program outcomes in family service settings. Interconnection of research with other curriculum content and with field practice.

714 Casework III: Family Service and Welfare. 3 credits. Family dynamics and family centered casework in both the public and private sector with focus on the integration of human behavior principles, knowledge of this system, and casework method at an advanced level. Relevance of various theoretical frameworks of family dynamics for casework knowledge, principles, and skills. Joint and conjoint interviewing, the marital relationship as a focus for treatment, family life education, family treatment, work with the aged, one-parent families, child placement, and adoptions. Concrete services within the framework of casework practice and collaboration with other disciplines. Impact of race, ethnicity, and social class in both the genesis and treatment of family problems. Pertinent research findings that illuminate practice.

715 Family Theory and Family Therapy: A Social Work Perspective. 3 credits. Prerequisite: Casework III, Group Work III, or permission of instructor. Emphasis on a conceptual base for the practice of family therapy. Attention to developments in the field; examination of cases which illustrate the practice of family therapy. Extension of knowledge and practice for family specialists; theoretical base and practice applications of family therapy for nonfamily specialists.

716 Perspectives on Aging. 3 credits. Identification, analysis, and evaluation affecting the aging, including analysis and evaluation of their social needs in relation to the environment and available resources. Emphasis on social isolation, community apathy, the dynamics of the composite population, and their effects on the elderly. Attention to the aged as a minority population.

717 Social Work Practice in School Setting. 3 credits. History of social work in schools. Issues in social work practice in public school settings, social influences of school and community, alternatives to traditional education, rights of students, public personnel team approach, social worker's role in relation to other school disciplines.

718 Social Work Practice and Policy in Child Welfare. 3 credits. Prerequisites: Method III and Policy II or permission of instructor. Examination of types of problems which bring children and adolescents to social service settings. Study of specialized techniques and skills necessary for work with children, adolescents, and their families. Attention to biopsychosocial develop-

mental aspects of child-rearing and child-care services. Emphasis on laws, policies, and approaches governing child welfare services, including current policy and practice issues with attention to socioeconomic, cultural, racial, and sex variables.

721 Physical Illness and Handicaps. 3 credits. Physical health and illness and the emotional and social stress placed upon individuals and families when physical illness and handicaps are present. Psycho-social factors in the etiology and effects of illness and other physical handicaps. Specific disease states, including medical terminology, and the emotional behavior related to specific physical disabilities. Physical illnesses and handicaps which are significant at various life stages. Human sexuality and dysfunctioning in the sexual area. Social conditions and ethnic and racial differences as they contribute to health problems. Physical factors in the cause and treatment of alcoholism and drug abuse. Role of the health system as an influence on the behavior of the person in that system.

722 Social Policy and Health Care. 3 credits. Analysis of the purposes, functions, and structures of the health care system at the federal, state, and local level. Policy development in the public and private sectors of the system as structured by movements and counter-movements within the health professions; professional organizations and related business organizations; the varieties of health related programs and services, shifting values regarding access to health care services, including the influence of individual and institutional racism and consumerism; funding patterns and resource distribution; and standard setting. Analysis of existing structures, proposed legislation, and issues within the context of the social right to quality health care, ranging from prevention to after-care.

723 Research in the Health System. 3 credits. Prerequisite: SLW 703. Current research issues and problems relevant to social work in the health system. Emphasis on the relationship between research and its use in social work practice in health settings. Execution and presentation of an independent research project.

724 Casework III: Health System. 3 credits. Application of human behavior and casework principles in the health system. Basic concepts of illness such as stress, psychosocial, and psychosomatic influences and the impact of race, social class, and ethnicity on states of health and illness. Behavior and practice in relation to specific disease entities such as cancer, heart disease, et al. Impact of illness on families and practice implications. Primary and secondary prevention and the particular health problems of the aging and dying. Role of the social worker in public and private secondary settings, principles of collaboration in an interdisciplinary field, and use of community resources. Research findings which illuminate practice and define further study areas.

725 Advanced Seminar in Direct Practice in the Health System. 3 credits. Prerequisites: SLW 721 and 724 or 755 or permission of instructor. Intensive study of direct social work practice in health settings. Emphasis on the conceptualization of a theoretical base for direct social work practice in health, including integration of biopsychosocial theory, practice theory and methods. In-

depth case presentation and analysis. Attention to the dimensions of direct social work practice in health settings, including traditional and innovative approaches, social work consultation, and a heightened sense of identity as a social worker in the health system.

726 Issues in Health Care and Health Social Work. 3 credits. Prerequisite: second-year standing for M.S.W. program students or permission of instructor. Student-centered exploration and study of selected issues in health care and health social work. In-depth analysis and presentation of issues of primary concern. Explication of implications for clinical and macro social work practice in multidisciplinary health settings.

727 The Health Client as Consumer and Advocate. 3 credits. Prerequisite: fourth semester standing or permission of instructor. Impact of the health consumer movement on professional autonomy and control; analysis of the effects of emerging patient rights (legal and social) on the relationships of health service consumers and providers at the micro and macro levels. Examination of the definition and promotion of consumer involvement in the planning, implementation, and evaluation of health services by government (executive, legislative, judicial) and the health professions, including social work. Alternative models of consumer participation and control at the micro and macro levels, and the promotion of client self-determination in health care.

728 The Interdisciplinary Team in Health Practice. 3 credits. Prerequisite: second-year standing for M.S.W. program students or permission of instructor. Exploration, definition, and analysis of interdisciplinary health team approaches to work with ill and disabled clients. Study the roles and functions of participants on interdisciplinary health teams emphasis on similarities and differences between social work and other disciplines as members of health teams; opportunities for and obstacles to effective service delivery by health teams. Development of a framework for interdisciplinary health team practice.

729 The Hospital as a Social Institution. 3 credits. Prerequisite: second-year M.S.W. program standing or permission of instructor. Examination of the hospital as an organization; the phenomenology of patient and client roles and the social construction of illness. Focus on the sick role as membership in the hospital structure, and on role occupants—patients, clients, staff, administrators as members of the larger community. Presentation of a conceptual framework outlining the structural properties of the hospital from the standpoint of “processing” the sick person and an institutional view of illness management. Attention to non-American structures and practices. Identification of the role of social work in hospitals.

731 Person in the Justice System. 3 credits. Definitions of deviant, antisocial, and criminal behavior. Etiology of socially unacceptable behavior. Theoretical positions in relation to deviant behavior. Explicit and implicit theoretical components of the various treatment modalities found in the justice system. Effect of personal and institutional racism on psychosocial functioning. Prison experience as a force in development of a changed life style.

732 Adult and Juvenile Justice Policies and Programs. 3 credits. Analysis of the purposes, functions, and structures of the adult and juvenile justice systems, legal and economic bases of the current system, analysis of the system, and the relationship of the parts of the system to one another. Policy development as structured by selected movements and counter-movements in American criminology, penology, forensic psychiatry, and social welfare, including institutional and non-institutional policies and programs; adult and juvenile system components; law as it relates to system clients; problems in system reform; and systemic and institutional racism. Current system-related issues ranging from arrest to probation and parole.

733 Research in the Justice System. 3 credits. Prerequisite: SLW 703. Review of research in the justice system. Emphasis on evaluation research and use of research findings by social workers in the justice system. Development of an independent research project by the student in the macro or micro areas of social work practice in the justice system.

734 Casework III: Adult and Juvenile Justice System. 3 credits. Integration of human behavior theory, knowledge of the justice system, and casework practice at an advanced level. Practice in authoritative secondary and transitional settings. Emphasis on various conceptual frameworks and the emerging treatment interventions developing from this knowledge, such as behavior modification, contract approaches, therapeutic community, and family therapy. Interventions with families of persons in the system. Interdisciplinary functioning, collaboration, and use of community resources. Impact of race, ethnicity, and social class. Research findings pertinent to behavior and practice.

735 The Adolescent and Delinquent Behavior. 3 credits. Prerequisite: fourth semester standing or permission of instructor. Emphasis on psychosocial-sexual development inclusive of family and peer relationships; social tasks and behavioral manifestations with particular reference to antisocial responses; racism and poverty as structural variables in the development and definition of antisocial and delinquent behavior. Examination and analysis of current status of adolescents in terms of social requirements and limitations and varying responses of the adolescent within the context of an historical perspective.

739 Social Work and the Law. 3 credits. Prerequisite: Method III or permission of instructor. Overview of fundamental principles of Anglo-American law; structure and function of legal system and its professional membership. Lawyers and their working relationship with social workers. Emphasis on client-centered problems encountered in confrontation with the legal community and the role social workers can play in helping clients deal with those encounters. Attention to issues relative to client needs as welfare rights, consumer protection, mental health treatment, family-related law, and discrimination relative to education, housing, employment, health care. Legal issues confronting social work, such as confidentiality, licensing, advocacy, witnessing.

741 Emotional Disorders. 3 credits. Definition of the concepts of mental health, mental illness, and mental

retardation, with a view of mental health and mental illness as a continuum. Etiology of emotional disorders and social deviance. Traditional classification systems and newer approaches in use of clinical practice. Alcoholism and other substance abuse in terms of he physiological, psychological, and sociological components of causation, behavior, and treatment. Causes of and treatment modalities in mental retardation and behavior patterns of the mentally retarded. Comparative theories and therapeutic approaches. Impact of racial and ethnic differences on emotional disorders and social deviance. Effect of mental health and the larger community on the behavior of the person.

742 Mental Health and Mental Retardation Policy and Services. 3 credits. Analysis of the purposes, organization, and public and private programs of federal, state, and local mental health and mental retardation system components. Policy development as structured by social responses to mental illness and mental retardation, including institutional and non-institutional policies and programs; shifting social values and attitudes; the law as it relates to the rights of the system's clients; forensic psychiatry; the socioeconomic status of the system's clients; including the impact of racism and poverty; citizen and consumer participation; and funding patterns and resource distribution. Analysis of current and proposed mental health and mental retardation legislation relating to needs ranging from prevention to after-care.

743 Research in the Mental Health/Mental Retardation System. 3 credits. Prerequisite: SLW 703. This course builds upon the foundation research course with primary emphasis on the application of research skills to MH/MR and substance abuse. Students will be expected to complete a research project and reports (both written and oral) based upon original research, previous research studies, or literature review.

744 Casework III: Mental Health and Mental Retardation. 3 credits. Application of principles of behavior and casework to problems of mental illness, emotional disorders, and mental retardation in children and adults. Theoretical approaches for understanding the relationship between differential diagnosis and selection of treatment interventions. Knowledge, principles, and skills of particular relevance for this system, including crisis intervention, milieu therapy, psychotropic drugs, social competency, behavior modification, and work with families. Impact of ethnicity and social class. Interdisciplinary functioning, collaboration, and interdigitation with traditional and emerging community resources. Pertinent research findings in human behavior and casework.

745 Family Practice in the Mental Health/Mental Retardation System. 3 credits. Prerequisites: SLW 741 and 744 or 755 or permission of instructor. Focus on the impacts, knowledge, and skills essential to help families which have a member suffering from acute or chronic conditions which fall within the system.

746 The Mentally Retarded and Their Families. 3 credits. Prerequisite: Method III or permission of instructor. The concept of mental retardation in historical perspective and the different approaches to defining and understanding it. Biological, psychological, social, and

societal correlations of mental retardation and the effects of its incidence on the family system; needs and resources of individuals and families. Policies and programs, with focus on the role and potential of social work methods vis-a-vis the mentally retarded and their families in prevention, intervention, and enhancement.

747 Social Work Intervention with Children and Adolescents in Mental Health Settings. 3 credits. Prerequisites: SLW 741 and Method III or permission of instructor. This course is designed for students who are interested in further developing their knowledge, acumen, and techniques of social work intervention with children and adolescents in mental health and mental retardation settings.

748 Group Therapy in Mental Health Settings. 3 credits. Prerequisite: SLW 741 or permission of instructor. This course is designed for students who are interested in developing an understanding of group therapy and its use in the mental health/mental retardation system. The course will concentrate on theoretical assumptions as well as experiential applications of group therapy principles as they are utilized in the MH/MR settings. Current research and reports from the literature, case records, and experiential exercises will be major teaching vehicles. Psychodynamic and ego-psychological theories will be the conceptual base for the course content.

749 Social Work Intervention in Substance Abuse. 3 credits. Exploration of major theoretical contributions to the field of substance abuse. Introduction and exploration of pharmacology of drugs and alcohol including stimulants, depressants, and opiates. Introduction and exploration of alcoholism from the disease concept as well as specific knowledge of substance abuse from the mental health point of view. The students shall become sensitized to controversial issues of substance abuse with emphasis on implications for practice. The students will be exposed to background information on history, theories, definitions, areas of controversy, research findings, and treatment modalities as related to substance abuse. Social work intervention will be emphasized. Case material, lectures, and group discussion will be major teaching vehicles.

750 Advanced Casework Practice in Mental Health Settings. 3 credits. Prerequisites: SLW 654, 744, or permission of instructor. The course will deepen the students' theoretical base in terms of both casework and psychodynamic theory. Special attention to the identification of and utilization in treatment of ego functions, defense mechanisms, transference, and countertransference. It will reinforce and deepen concepts relative to intensive casework treatment, aid in the establishment of an identity as a clinical social worker, and help to define the parameters of clinical social work treatment.

751 Social Work Crisis Intervention and Planned Short Term Treatment in MH/MR/SA Services. 3 credits. Prerequisites: Method III and SLW 741 or permission of instructor. The social work practice of crisis intervention and planned short term treatment in mental health, mental retardation, and substance abuse services. Conceptual and theoretical aspects of the differential use of crisis intervention and planned short

term treatment by social workers with clients with various emotional disorders within the context of mental health services. Direct intervention; consultation; collaboration; and service delivery issues will be explored. Active involvement in critically developing ongoing knowledge of the subject area.

755 Social Group Work III. 3 credits. The perception, evaluation, and evaluative actions of the worker in relation to individual performance in the group. Focus on individual contributions to, and gains from the group process. Role of the worker in helping individuals use group relations to meet their common and differential needs in social functioning. *Behavioral Knowledge* practice in relation to social and psychological criteria for the individual social functioning in the group. Knowledge of member's needs and strengths in relation to target populations and racial and ethnic factors. The use of program content in social group work practice. Differential use of method in specific delivery systems is analyzed, and pertinent research findings in human behavior and group work incorporated.

756 Social Planning III. 3 credits. Continuation of SLW 635, involving the completion of a problem-solving assignment in planning related to the design, funding, and evaluation of a specialized human resources delivery system. Utilization of social policy analysis and research methodology in planning. Peer review and interchange of analyses. Differential use of method in specialized systems.

757 Administration III. 3 credits. Knowledge and skill in administrative supervision. Use of authority and power. Personnel evaluation. Manpower utilization. Staff development. Planning of training programs. The role of middle-management in human resources settings. Recruiting. Differential use of method in specific delivery systems.

761 Images of Man. 3 credits. Prerequisite: SLW 651, 711, 721, 731, 741, or permission of instructor. Exploration of major theoretical contributions to the study of the person and analysis of the relationship between these theoretical models and their application to treatment and their implications for the effectiveness of clinical intervention. Examples of surveyed theoretical models include such major figures as Freud, Adler, Rank, Sullivan, Bateson, The Third Force, and emerging Family Systems theorists. Emphasis on the life experiences of the theorist as it impinges upon and interacts with the cognitive approaches to the study of human personality. Integration of life experiences, theoretical models, and clinical intervention modes into an integrated approach to professional practice.

762 Human Sexual Behavior. 3 credits. Prerequisites: SLW 651, 711, 721, 731, 741, or permission of instructor. Exploration of human sexual development biologically, psychologically, and socially. Examination of theory; male and female development; variations in sexual expression. Current issues, including abortion and fertility.

763 Advanced Group Methods for Social Workers. 3 credits. Prerequisite: SLW 605 or permission of instructor. An advanced course in group methods for students whose primary method is social casework. Not

for group work majors. Expansion and intensification of practice base provided in first course in social group work. Emphasis on achievement of greater sophistication and mastery in group counseling methodology, role play and discussion leadership methods, evaluation of group and individual behavior, leader role in facilitating group development, and individual gain. Application of group work methods to family group and to various settings. The relation of group work to group psychotherapy and the sensitivity-encounter movement.

764 Social Group Work IV. 3 credits. Prerequisite: SLW 655 or permission of instructor. The final course in a series of method courses for social group work majors. Integration and application of group work practice theory in relation to a variety of other contingent factors in social work practice including supervision of group leaders; the process of group work consultation; methods of team collaboration with other disciplines; the relation of group work to group psychotherapy; and the sensitivity-encounter movement. The application of group work to family group counseling and to varied target populations by age, sex, ethnicity, agency purpose, and client need. Use of groups for crisis intervention. Explaining group work to other professions. Methods of self-evaluation in group work practice.

765 Supervision. 3 credits. Prerequisite: Method III or permission of instructor. Task components and responsibilities in supervision of the social worker. Emphasis on a conceptual framework for supervision, including knowledge base, methods, and skill in supervision. Attention to affirmative action programs in social service delivery systems.

766 Program Evaluation. 3 credits. Methods, problems, and research findings related to the evaluation of social welfare programs. Research design options and methodologies available for program evaluation. Organizational and administrative contexts in which evaluation activities are initiated, supported, disseminated, and utilized. Data processing and the roles of data analysis and the computer in the evaluation of social welfare programs.

769 Women's Issues and Social Work Practice. 3 credits. New perspectives on women and their changing roles as these affect social work practice; direct and indirect ways sexist attitudes are acquired and conveyed; effects of changing female roles on human behavior theory and its application, development of new life styles; social work theories and their relevance to today's world; current women's issues; and the social worker's role as counselor and advocate.

777 Seminar in Social Work Education I. 3 credits. Base course for the education concentration. Dimensions and demands of the faculty role in social work education. Systems of higher education. History and issues in social work education. Curriculum and course design, including development of objectives, pre-assessment, instructional methods, and evaluation.

778 Seminar in Social Work Education II. 3 credits. Continued focus on teaching methods and skills in relation to students' concurrent teaching experience. Faculty rights and responsibilities. Students' rights.

Advising, field liaison, and field instruction roles. Accreditation of educational programs in social work.

791 Topical Seminar. 3 credits. A seminar on current, specialized areas of interest to social work. Content offered will be reflective of current issues in the field. Particular topics for study in any one semester will be determined jointly by the students and the faculty instructor.

792 Independent Study. 1-4 credits. The student will be required to submit a proposal for investigating some area or problem in social work not ordinarily included in the regular social work curriculum. The results of the student's study will be presented in a report. Open with faculty approval. A maximum of four independent study courses may be included in a student's educational program.

793 Field Instruction III. 3 credits. Continuation of field instruction and learning as an accountable representative of a social agency with emphasis on the application of system specific knowledge and social work practice skill development. Emphasis on the integration of human behavior and research content for students with concentrations in social casework and social group work practice, and social policy and research content for students with concentrations in administration and social planning. Particular attention to application of knowledge and the development of skill necessary for professional social work practice in a secondary method.

794 Field Instruction IV. 3 credits. Continued integration and application of knowledge and learning required for professional social work practice in a specific delivery system. Emphasis on the refinement of methodological skills required for entry into professional practice.

795 Practicum in Social Work Education. 3 credits. Prerequisites: SLW 777 and concurrent enrollment in SLW 778. Required for all students in the social work educator preparation program. Experiential learning in undergraduate education for social work with mentorship by a faculty member of the host college or university. Demands and responsibilities of the faculty office, including course preparation and teaching.

DOCTORAL COURSES IN SOCIAL POLICY AND SOCIAL WORK (SPW)

701 Research Methods I. 3 lecture hours. 3 credits. Prerequisite: graduate standing in social policy and social work or permission of the program. Concentrated study of the principles of research design in experimental and nonexperimental social research. The logic of science, research design, sampling, and measurement will be considered within the context of applied research settings.

702 Research Methods II. Semester course; 3 lecture hours. 3 credits. Prerequisite SPW 801. Study of principles and problems in the implementation of social research designs. Data collection, measurement issues, and analysis procedures will be considered in a variety of research contexts.

706 Social Theory and Public Policy. Semester course; 3 lecture hours. 3 credits. Prerequisite: graduate standing in social policy and social work or permission of the program. An examination of the theoretical component of public policy on the macro and micro levels. The structure of theoretical arguments is examined, and prominent theoretical perspectives and developments are reviewed.

708 Behavioral Science Theory for Social Work Practice. Semester course; 3 lecture hours. 3 credits. Prerequisite: graduate standing in social policy and social work or permission of the program. This course will survey the major theoretical approaches which examine the psychological determinants of behavior. Emphasis will be on those approaches which have particular relevance for direct social work practice, that is, work with individuals, families, and small groups.

710 Social Thought and Social Policy. Semester course; 3 lecture hours. 3 credits. Prerequisite: admission to doctoral program in social policy and social work or permission of instructor. An exploration of social thought as expressed in economic theory, philosophy, political theory, and social work. Specific emphasis on social thought as influencing social policy in major fields of social work practice, and on the social forces that impact on social reform.

711 Origin and Development of Social Welfare Policy. Semester course; 3 lecture hours. 3 credits. Prerequisite: graduate standing in social policy and social work or permission of the program. A conceptual approach to the development of social welfare policy, viewed from sociological, historical, and evaluative contexts.

715 Social Work Practice Theory. Semester course; 3 lecture hours. 3 credits. Prerequisite: graduate standing in social policy and social work or permission of the program. This course will integrate social and behavioral theories with the variety of practice modalities utilized in social work practice with individuals, families, and small groups.

716 Contemporary Issues in Social Work Education. Semester course; 3 credits. Prerequisites: SPW 701, 702, 708, and 715 or permission of instructor. Major controversies which have emerged or may be anticipated in social work education currently and in the near future. Depending on their resolution the impact on social work education will be considered. The over-arching framework will be the place of professional education within the academic institution.

729 Program Evaluation for Social Welfare Practice. Semester course; 3 credits. Prerequisites: SPW 701 and 702 or permission of instructor. Design options in program evaluation for social welfare. Statistical procedures as related to design options. Models of program evaluation and the interface of such models with design options. The politics of program evaluation for social welfare, including strategies for producing research, dissemination of findings, and the use of findings for organizational planning and change.

730 Methodological Issues in Social Policy Research. Semester course; 3 seminar hours. 3 credits. Prerequisite: SPW 801 or permission of instructor. Examination of several major social research studies, with special attention to their design and associated data analysis

techniques. The interactions between statistical methodology and economic and political constraints in the conduct of social policy research will be emphasized.

731 Child Welfare Policy and Research. Spring semester; 3 seminar hours. 3 credits. Prerequisite: SPW 801 and 811 or permission of instructor. Examination of a wide range of federal, state, and local policy issues related to the child welfare area of human services.

732 Social Psychology of Organizations. Spring semester; 3 lecture hours. 3 credits. An examination of social psychological processes and their effects on the behavior, attitudes, and social relations of individuals operating within a human service organizational context.

791 Topical Seminar. Semester course; 3 lecture hours. 3 credits. Prerequisite: permission of instructor. Study of the current state of knowledge and research within a specialized area of concern to social policy and social work. May be repeated for credit.

792 Independent Study. Semester course; 1, 2, or 3 credits. May be repeated for a maximum of 6 credits, which count toward the 36 required credits. May then be taken for an additional 1-12 credits to accommodate the need for continuous enrollment required of all students between completion of required course work and passage of the comprehensive examinations. Prerequisite: permission of the program. Independent reading and study in selected areas under the supervision of a member of the faculty.

793 Teaching Practicum for Doctoral Students. Semester course; 3-6 credits. Prerequisite: completion of core courses—SPW 701, 702, 706, 708, 711, and 715 or permission of instructor. Required for all students specializing in clinical social work education; available to other doctoral students who fulfill prerequisites and secure permission of instructor.

797 Directed Research. Semester course 1-6 credits. May be repeated for credit. Predissertation research project under faculty supervision.

898 Dissertation Research. Semester course; 1-18 credits. May be repeated for credit. Prerequisite: successful completion of comprehensive examinations. Students are required to complete 18 credit hours. May be taken for additional credits until dissertation is formally accepted.

ADVISORY BOARD TO THE SCHOOL OF SOCIAL WORK

Harvey Johnson, Jr.

Chairman
Portsmouth

Grace E. Harris
Dean

Delwin M. Anderson
Arlington

Joseph Bevilacqua
Commissioner
Department of Mental Health/Mental
Retardation
Richmond

262 School of Social Work

Miriam Birdwhistell
University of Virginia Medical Center
Charlottesville

Charlotte Carnes
Social Work Consultant
Virginia Medical Assistance Program
Richmond

Virginia Cooke
Manpower Specialist
Richmond Community Action Program
Richmond

Virginia Crockford
Richmond

William Crunk
Richmond

Jean Deese
Richmond

Tyrone Dickerson
General Manager
WENZ Radio Station
Richmond

Elsie Elmore
Richmond

Wilda Ferguson
Commissioner
Virginia Department for the Aging
Richmond

Joseph L. Fisher
Secretary of Human Resources
Commonwealth of Virginia
Richmond

Margaret D. Foley
Director
Department Mental Health and Mental
Retardation
Richmond

Mary Fray
Culpeper

Frances Goddard
Social Worker
Boston

Raymond E. Gross
Manager-External Affairs
C and P Telephone Company
Richmond

Franklin Hough
Executive Director
Virginia Baptist Children's Home
Salem

Herbert Krueger
Powhatan

William Lukhard
Commissioner
Virginia Department of Social Services
Richmond

Elizabeth Mackler
Premier East Imports
Richmond

Eleanor Monroe
Arlington

Frank Negengard
Chief, Social Work Service
McGuire Veterans Administration Hospital
Richmond

Wayne Orton
Assistant City Manager
Portsmouth

Dudley L. Parker, Jr.
Vice-President
Best Products Company, Inc.
Richmond

Sherry Peterson
Social Work Supervisor
Children's Home Society of VA
Richmond

Robert L. Price
Department of Health
Richmond

William Redmond
Counselor
Employee Assistance Program
Richmond

Jane Saunier
Charlottesville

Alvin Schexnider
Associate Dean
Virginia Commonwealth University
School of Community and Public Affairs
Richmond

Suzanne Shilling
Attorney at Law
Richmond

Gilbert Waters
Western Electric
Richmond

Katherine Webb
Virginia Hospital Association
Richmond

Samuel S. Wurtzel
Richmond

**AFFILIATED FIELD AGENCIES AND
FIELD INSTRUCTORS 1982-83**

**A. M. Masri Private Practice
(Petersburg)**

Jane Hudson, Administrator
Beverly Walters, Field Instructor

**Alexander Hospital
(Alexandria)**

Arlene Hewitt, Director of Social Work
Ann Fetrow, Assistant Director
Lavinia Cohen, Field Instructor

**American Civil Liberties Union
(Richmond)**

Chan Kendrick, Director
Rosa Jimenez-Vazquez, Field Instructor

**American Heart Association
(Richmond)**

Richard Summers, Executive Director
Linda McMinimy, Field Instructor

**Arlington Mental Health Center
(Arlington)**

Thomas Geib, Director
Alice Moss, Field Instructor

**Arlington Social Services
(Arlington)**

Barbara Glaser, Director of Social Services
Virginia Ball, Field Instructor

**Bank of Virginia Company
(Richmond)**

John Johnston, Director
Phillip Davidson, Field Instructor

**Beth Sholom Home of Virginia
(Richmond)**

Ira Robbins, Executive Vice-President and
Field Instructor

**Brookfield, Incorporated
(Glen Allen)**

Tom Williamson, Director
Frances Wood, Field Instructor

**Catawba Hospital
(Catawba)**

Nancy Barton, Director of Social Work
Herb Beskar, Field Instructor

**Catholic Family and Children's Services
(Richmond)**

Daniel Jacobson, Director
Sheila Kleff, Field Instructor
Janet Moncure, Field Instructor

**Central State Hospital
(Petersburg)**

Gerald Balone, Administrator
Anita Crocker, Director of Social Work and
Field Instructor
Jeanne Flinn, Field Instructor
Linda Smid, Field Instructor

**Central Virginia Child Development Clinic
(Lynchburg)**

Kim Song, Director
Helen Smith, Field Instructor

**Cerebral Palsy Center
(Richmond)**

Carol Clay, Social Therapy Supervisor
Charlotte Schrieberg, Field Instructor

**Chesterfield-Colonial Heights Community
Diversion Incentive Program
(Chesterfield City)**

Glen Peterson, Director and
Field Instructor

**Chesterfield County Mental Health Center
(Chesterfield)**

Morton Horowitz, Director
Delores Anderson, Field Instructor
Clay Neal, Field Instructor
Mary Lou Slagel, Field Instructor
Jackie Stone, Field Instructor

**Chesterfield County Public Schools
(Chesterfield)**

Howard Sullins, Superintendent
Linda Vanstory, Field Instructor

**Chesterfield County Social Services
(Chesterfield)**

Jean Smith, Director
Mary Hutcherson, Field Instructor

**Children's Home Society
(Richmond)**

Peter Pufki, Assistant Executive Director and
Field Instructor

**Children's Hospital
(Richmond)**

Jane Nelson, Director of Social Work
Kathy Carlock, Field Instructor

**Children's Hospital
(Washington)**

Harold Lipton, Director of Social Work
Natalie Zimmerman, Field Instructor

**Children's Rehabilitation Center
(Charlottesville)**

Sharon Hostler, Administrator
Frank Rozzi, Field Instructor

**Community Mental Health Activity
(Fort Belvoir)**

Donald Beale, Chief Social Worker and
Field Instructor

**Crater Child Development Clinic
(Petersburg)**

Steven Butnik, Director
Linda Ayscue, Field Instructor

Daily Planet
(Richmond)

James Forte, Director
Ann Gill, Field Instructor

Dawn Health Center
(Hanover)

Freida McNeil, Director and
Field Instructor

Department of Social Services
(Front Royal)

Ann Carbaugh, Director
Martha Neely, Field Instructor

Division of Child and Family Psychiatry
(Charlottesville)

Miriam C. Birdwhistell, Chairman, DMCSW
Corinne H. Carr, Director of Staff
Development
Marilyn Hocking, Field Instructor

Division of Social Services
(Richmond)

Elizabeth Whitley, Director of Management
and Services and Field Instructor

Eastern State Hospital
(Williamsburg)

Charles Nimmo, Chief, Social Work Services
Deborah Moore, Field Instructor
James Reese, Field Instructor

Fairfax Hospital
(Fairfax)

Anne Showalter, Director of Social Work
Susan Anthone, Field Instructor

Family and Children's Services of Richmond
(Richmond)

Richard J. Lung, Executive Director
Rosemary Farmer, Field Instructor
Bland Jones, Field Instructor
Sarah McCowan, Field Instructor
Claudine Penick, Field Instructor
Sally Wainwright, Field Instructor

Family Practice
(Charlottesville)

Sam Miller, Director
Benjamin Barnett, Chairman
Dorothy Rudolph, Field Instructor

Family Services
(Charlottesville)

Cathy Bodkin, Director and
Field Instructor

Family Services of Roanoke
(Roanoke)

Raleigh Campbell, Director
Maxi Davis, Executive Director
Catherine Nye, Field Instructor

Fauquier Family Guidance Clinic
(Warrenton)

John Waldeck, Director and
Field Instructor

Ferrum College
(Ferrum)

Ellis Karr, Director of Social Work and
Field Instructor

Friends' Association for Children
(Richmond)

John Purnell, Jr., Executive Director
Robert Durbin, Field Instructor
Jeanne Woodard, Field Instructor

Hampton Mental Health Center
(Hampton)

James Eisenhower, Senior Psychiatric Social
Worker and Field Instructor

Hanover Family Counseling Center
(Ashland)

Matti Jones, Director
Renee Fretheim, Field Instructor
Robert Parks, Field Instructor

Henrico County Public Schools
(Highland Springs)

Anne Atkinson, Supervisor of Social Work
Marion Brown, Field Instructor

Henrico County Department of Social Services
(Richmond)

Bettie Kienast, Director
Cynthia Daughtry, Field Instructor
Mary J. Lung, Field Instructor

Henrico Juvenile and Domestic Relations Court
(Richmond)

Donny Connors, Director
Claire Wompieriski, Field Instructor

Henrico Mental Health and Retardation Services
(Glen Allen)

James Stewart, Administrator
Robert Glenn, Coordinator of Training
Estelle Cole, Field Instructor
Frank Curry, Field Instructor
James McCabe, Field Instructor
Karen Oshansky, Field Instructor

Highlands Mental Health Services
(Abingdon)

Bryne Riley, Director
Carolyn Peterson, Field Instructor

Hiram Davis Medical Center
(Petersburg)

Lewis Doucet, Director
Denise Tormey, Field Instructor

Human Resources
(Richmond)

Jane Sargent, Director
Denise Bonaparte, Field Instructor

**Jewish Family Services
(Richmond)**

Ann P. Lane, Director and Field Instructor

**Jewish Family Services of Tidewater
(Norfolk)**

Neil Newstein, Director
Gail Cervarich, Field Instructor

**John F. Kennedy Institute
(Baltimore)**

Hugomoser Moser, Director
David O'Hara, Director of Social Work
Joan Ephross, Field Instructor

**Johns Hopkins University Hospital
(Baltimore)**

Susan Mewborn, Field Instruction Coordinator
Deborah Scott, Field Instructor

**John Randolph Hospital
(Hopewell)**

Franklin Boyce, Administrator
Betty Phillips, Field Instructor

**Kenner Army Hospital
(Fort Lee)**

Jack Peacock, Chief Social Worker
Fred Floyd, Field Instructor

**Lancaster County Department of Social Services
(White Stone)**

Suzanne Chris, Director of Social Work and Field Instructor

**Longwood College
(Farmville)**

George Stonikinis, Director of Social Work
Sarah Young, Field Instructor

**Lor-Berg Psychiatric Clinic
(Richmond)**

William Lordi, Director
Margaret Robinson, Field Instructor

**Lynchburg Training School and Hospital
(Lynchburg)**

William Taylor, Director
Jim Hulse, Field Instructor

**Marion Correctional Center
(Marion)**

E. C. Morrin, Warden
Shirley Abell, Field Instructor

**McGuire Veterans Administration Hospital
(Richmond)**

Frank Negangard, Director of Social Work
Phyllis McGhee, Field Instructor
Marie Piper, Field Instructor
Dorothy Canipe, Field Instructor

**Medical College of Virginia—Bureau of Alcohol
Studies
(Richmond)**

Marjorie Barr, Administrator
Brenda Wilson, Field Instructor

**Medical College of Virginia—Department of
Social Work
(Richmond)**

Muriel Felder, Director
Calvine Battle, Field Instructor
Ellen Cross, Field Instructor
Patty McMullen, Field Instructor
Elena Siddall, Field Instructor
Mary Walker, Field Instructor
Gladys Tatarsky, Field Instructor

**Mental Health Services of Roanoke
(Roanoke)**

Gerald Uhlman, Director of Program
Evaluation and Field Instructor

**Methodist Children's Home
(Richmond)**

Gerald Ward, Executive Director
Greg Peters, Field Instructor

**Dr. Kurt Morbitzer's Private Practice
(Petersburg)**

Kurt Morbitzer, Director
George Spencer, Field Instructor

**National Association of Social Workers
(Maryland)**

Isadora Hare, Senior Staff Associate
Mary A. Keenan, Field Instructor

**Naval Regional Medical Center
(Portsmouth)**

Christopher Wolf, Chief, Social Work Services
Larry Zoeller, Field Instructor

**Norfolk Psychiatric Institute
(Norfolk)**

Karen McKinley, Director of Social Work
and Field Instructor

**Norfolk Public Schools
(Norfolk)**

Albert L. Ayars, Superintendent
Sherin Shearin, Field Instructor
Ann Parker, Field Instructor

**Northern Virginia Family Service
(Falls Church)**

Mary Agee, Associate Director
Sidney Berman, Executive Director
Joyce Ryan, Field Instructor

**Northwestern Virginia Health System Agency
(Charlottesville)**

Thomas Bernier, Executive Director and Field Instructor

**Petersburg Department of Social Services
(Petersburg)**

Robert Reitmeier, Director
Jerry Walters, Field Instructor

**Petersburg General Hospital
(Petersburg)**

Mary Greene, Director of Social Work and
Field Instructor

**Philip Morris
(Richmond)**

Carson Tucker, Manager of Management
Development
Robin Harrison, Field Instructor

**Poplar Springs Hospital
(Petersburg)**

Jerry Walters, Director of Adolescent Unit
Frank Lira, Director of Adult Services
James Doran, Field Instructor
William Schubmehl, Field Instructor

**Portsmouth Psychiatric Institute
(Portsmouth)**

Eileen Selz, Director of Social Work
Judith Anapol, Coordinator of Field In-
struction
Cince Pishioneri, Field Instructor

**Portsmouth Juvenile Court
(Portsmouth)**

Betty Davis, Director
Robert Hargraves, Field Instructor

**Prince William County Community Mental
Health Center
(Dumfries)**

Carol Heil, Coordinator of Social Work
Training
Cathy Wood, Field Instructor

**Rappahannock Area Child Development Clinic
(Fredericksburg)**

Edward Gratzick, Director and
Field Instructor

**Rappahannock Day Treatment Services
(Fredericksburg)**

Barbara Kenney, Director and Field Instructor

**Rappahannock Guidance Clinic
(Fredericksburg)**

Rick Sampson, Clinic Director
Gail Sullivan, Field Instructor

**Reading and Child Study Center—VCU
(Richmond)**

Jean Lokerson, Coordinator
Anne Fortune, Field Instructor

**Refugee Resettlement Center
(Richmond)**

Carol Straitiff, Casework Supervisor and
Field Worker

**Region Ten Community Services
(Charlottesville)**

Millie Rebhun, Coordinator of Field In-
struction

Howard Vidaver, Field Instructor
Nancy Willner, Field Instructor

**Richmond Health Center (East and West)
(Richmond)**

Dan Stembridge Administrator
Dennis Hawley, Field Instructor
Andrea Wiley, Field Instructor

**Richmond Public Health Department
(Richmond)**

Grace Williams, Director of Medical Social
Work

JoAnn Strumb, Field Instructor

**Richmond Juvenile and Domestic Court
Relations
(Richmond)**

Frances Hare, Director
John Brown, Field Instructor

**Richmond Department of Social Services
(Richmond)**

Thomas Hogan, Director
Clinton Strance, Field Instructor
Stephany Morgan, Field Instructor
Cynthia Erdahl, Field Instructor
Beverly Nickens, Field Instructor

**Richmond Public Schools
(Richmond)**

Fred Jones, Supervisor Pupil Personnel
Services

Ada Wallace, Field Instructor
Denna Joy, Field Instructor
Jenette Robinson, Field Instructor
Elizabeth Miller, Field Instructor
Maxi Davis, Field Instructor
Clark Leonard, Field Instructor

**Richmond Department of Mental Health and
Mental Retardation
(Richmond)**

Margaret Foley, Director
Janet Chaney, Field Instructor
Joyce Byrne, Field Instructor
Joe Skinner, Field Instructor
Margaret Sellers, Field Instructor
Declan Miney, Field Instructor
Bill Murphy, Field Instructor

**Roanoke Valley Council of Community Services
(Roanoke)**

Raleigh Campbell, Executive Director and
Field Instructor

**Roanoke Valley Psychiatric Center
(Salem)**

Linda May, Director of Social Work and
Field Instructor
William Semmones, Administrator

**Saint Alban's Psychiatric Hospital
(Radford)**

Robert Terrell, Administrator
Janet McLaughlin, Field Instructor

**Saint Elizabeth's Hospital
(Washington)**

Phillip Rosenblum, Chief, Social Work
Training
Carol Rodeffer, Field Instructor
Ruth Leob, Field Instructor
Karen Clarke, Field Instructor

**Saint Mary's Hospital
(Richmond)**

Francis Littman, Director of Social Work
Mary Giegerich, Field Instructor

**Saint Joseph's Villa
(Richmond)**

Arthur Caliman, Executive Director
Ray Pardue, Field Instructor

**Sheltering Arms Hospital
(Richmond)**

Becky Mahler, Director
Diane Deckart, Field Instructor

**Smyth County Department of Social Services
(Marion)**

Birgil Miller, Director of Social Work
Susan Helton, Field Instructor

**Southside Area Mental Health Clinic
(Petersburg)**

Betty Haack, Clinical Services Coordinator
and Field Instructor

**Southside Virginia Training Center
(Petersburg)**

John Thornton, Director of Social Work
and Field Instructor

**Springwood Psychiatric Institute
(Leesburg)**

John Thomas, Director of Social Work and
Field Instructor

**Stepping Stone Group Home
(Richmond)**

Paige Young, Director and Field Instructor

**United Way of Greater Richmond
(Richmond)**

Larry Walton, Executive Director
Cathy Pond, Field Instructor

**Valley Community Mental Health Clinic
(Staunton)**

Patricia F. Coopersmith, Director of Mental
Health Services
Barbara Puzanskas, Field Instructor

**Veteran's Administration Hospital
(Salem)**

Arnie Simmons, Director of Social Work
Hugh Davis, Hospital Director
Harry Hatter, Field Instructor
Mike Moreland, Field Instructor

**Veteran's Administration Medical Center
(Washington, D.C.)**

Melanie Brishman, Asst. Director of Social
Work Services
Jean Gaver, Field Instructor

**Virginia Beach Department of Social Services
(Virginia Beach)**

Frances Elrod, Director of Social Services
Lois Smith, Field Instructor

**Vietnam Era Veterans' Outreach Center
(Richmond)**

Dan Doyle, Director
Gary Cohen, Field Instructor

**Virginia Department of Corrections,
Correctional Center for Women
(Goochland)**

Ann S. Downes, Warden
Cassandra Dove, Field Instructor

**Virginia Department of Corrections
Community Diversion Program
(Richmond)**

C. P. Brumfield, Community Corrections
Specialist and Field Instructor

**Virginia Department of Health—
Bureau of Crippled Children
(Charlottesville)**

William R. Ferguson, Director
Diana Saunders, Field Instructor

**Virginia Department of Mental Health
(Richmond)**

Gloria DeCuir, Coordinator and Field
Instructor

**Virginia Department of Social Services
(Richmond)**

William Lukhard, Commissioner
Phyllis Briedenbaugh, Field Instructor
Linda Dressler, Field Instructor

**Virginia Department of Social Services
Regional Office
(Richmond)**

Mary Hale, Director
Ted Eckert, Field Instructor

**Virginia Division for Children
(Richmond)**

Martha Gilbert, Director
Peter Williams, Field Instructor

Virginia Home
(Richmond)

Walton Pettit, Director
Sally Beverly, Field Instructor

Virginia Home for Boys
(Richmond)

Steve Ankiel, Director of Programs
and Field Instructor

Virginia State University
(Petersburg)

Jean Cobbs, Chairman, Department of
Sociology and Field Instructor

Virginia Union University
(Richmond)

Norma Goode, Director Social Work Program
and Field Instructor

Virginia Commonwealth University
School of Social Work—BSW Program
(Richmond)

Beverly Koerin, Director
Marcia Harrigan, Field Instructor

Washington City Department of Social Services
(Abingdon)

Douglas Meade, Director and Field Instructor

West Virginia Department of Welfare
(Martinsburg)

Lloyd O'Brian, Director
Gene Snyder, Field Instructor

Western State Hospital
(Staunton)

Linda Combs, Clinical Social Work Director
Steve Heskowitz, Field Instructor

William Byrd Community House
(Richmond)

Jodi C. McWilliams, Executive Director
Amerlia Bakunas, Field Instructor

Woodburn Community Mental Health Center
(Annandale)

Mary A. Gasaway, Coordinator of Social
Work Training
Jerry Zimmerman, Field Instructor

David Florence, Field Instructor
Betty Petersilia, Field Instructor

**AFFILIATED UNDERGRADUATE SOCIAL
WORK PROGRAMS—SOCIAL WORK
EDUCATOR PREPARATION PROGRAM**

Christopher Newport College
(Newport News)

Cheryl Mathews, Director of
Social Work Program and
Mentor

Ferrum College
(Ferrum)

Ellis M. Karr, Director of
Social Work Program and
Mentor

James Madison University
(Harrisonburg)

Gary Smith, Coordinator
R. Ann Myers, Mentor

Longwood College
(Farmville)

George Stonikinis, Director of
Social Work Program and Mentor
Sarah Young, Ph.D., Mentor

Virginia Commonwealth University
(Richmond)

Beverly Koerin, Ph.D., Director
of BSW Program and Mentor
Marcia Harrigan, Mentor

Virginia State University
(Petersburg)

Jean Cobbs, Ed.D., Chairman of
Sociology Department and Mentor

Virginia Union University
(Richmond)

Norma Goode, Ph.D., Director of
Social Work Program and
Mentor



PART XII—Interdisciplinary and Cooperatively Offered Graduate Degrees

Master of Interdisciplinary Studies

FACULTY

Sharp, Nicholas A., Director, Nontraditional Studies,
Ph.D., Ohio State University; English Renaissance.

The Master of Interdisciplinary Studies (M.I.S.) Program offers students a coherent method of combining regular graduate studies in two or more selected disciplines. It is intended for students who wish to pursue a clearly defined, multidisciplinary program rather than a professional curriculum or a specialization in a traditional discipline.

The M.I.S. Program is a cooperative venture between Virginia Commonwealth University and Virginia State University. Students admitted to the M.I.S. Program at VCU will complete a minimum of nine hours of course work in Virginia State University classes.

PROGRAM DESCRIPTION

Before entering the program, students identify two or more disciplines in which to pursue graduate courses. They then complete regular graduate courses within each of the chosen disciplines, plus additional electives in other fields. When regular course work is completed, they select a special project for additional study and complete three

to six credits of approved independent study, special topics, directed study, or thesis.

ADMINISTRATION

At Virginia Commonwealth University the M.I.S. Program is administered by the director nontraditional studies in the Division of Continuing Studies and Public Service. The director works closely with an advisory committee composed of graduate faculty from several disciplines.

ADMISSION

To be admitted to the M.I.S. Program at VCU, students must provide the following specific requirements in addition to the general requirements for graduate admissions stated earlier in this bulletin:

- 1) an overall minimum 2.8 GPA (on a 4.0 scale) in the last 60 credits of undergraduate work or, in some cases, a minimum of 3.0 GPA in at least nine hours of graduate work;
- 2) a statement explaining (a) the kind of interdisciplinary curriculum desired and (b) specific areas of study intended.

Applications for admission may be obtained from University Enrollment Services,

Graduate Admissions, Virginia Commonwealth University, 821 West Franklin Street, Richmond, VA 23284, or in the Office of Nontraditional Studies, 901 West Franklin Street, Room 105, Richmond, VA 23284.

DEGREE REQUIREMENTS

In addition to the general requirements stated earlier in this bulletin, Master of Interdisciplinary Studies students must complete the following requirements:

- 1) a minimum total of 39 graduate semester credits, including (2) and (3) below;
- 2) 3-6 semester credits of approved directed research, independent study, special project, or thesis work;
- 3) at least nine and not more than 15 graduate level semester credits (not including requirement 2 above) in each of at least two disciplines. No more than 15 credits in any one discipline (exclusive of the directed research, independent study, special project, or thesis requirement) may be applied toward an M.I.S. degree. No more than nine credits in business and/or economics courses may be applied to an M.I.S. degree.

TRANSFER CREDITS

Up to six semester credits of graduate courses may be transferred into the M.I.S. Program from institutions other than Virginia Commonwealth University and Virginia State University. All such transfer credits, however, must conform to the regulations stated earlier in this bulletin.

Students in the M.I.S. Program must complete at least nine credits of their programs at Virginia State University. They may take these courses either on the main campus of Virginia State University in Petersburg or at an off-campus location, including VCU courses taught in the Richmond area.

Department of English and Division of Teacher Education

FACULTY

Armour, Robert A. *Professor* Ph.D., University of Georgia; film.

Beacham, E. Walton *Associate Professor* M.F.A., University of Arkansas; poetry.

Berry, Boyd M. *Associate Professor* Ph.D., University of Michigan; Renaissance, Milton.

Bloom, Lynn Z. *Professor and Chairman* Ph.D., University of Michigan; American literature, biography, composition.

Booth, Mark W. *Associate Professor* Ph.D., Harvard University; eighteenth century British.

Brown, E. Allan *Professor Emeritus* Ph.D., University of North Carolina.

Coppedge, Walter R. *Professor* Ph.D., Indiana University; Shakespeare, English Renaissance drama.

Dance, Daryl C. *Associate Professor* Ph.D., University of Virginia; American literature.

Duke, Elizabeth F. *Associate Professor* Ph.D., University of Iowa; linguistics, American literature.

Duke, Maurice *Professor* Ph.D., University of Iowa; American literature, editing, professional and creative writing.

Fine, Richard A. *Assistant Professor* Ph.D., University of Pennsylvania; American studies.

Gallant, Christine C. *Assistant Professor* Ph.D., University of Minnesota; romanticism.

Griffin, Claudius W. *Associate Professor* Ph.D., Indiana University; teaching composition, Shakespeare.

Harkness, Marguerite *Assistant Professor* Ph.D., State University of New York at Binghamton; twentieth century British, nineteenth century British.

Hedgepeth, Chester M., Jr. *Assistant Professor* Ed.D., Harvard University; modern and contemporary literature.

Kinney, James J. *Associate Professor* Ph.D., University of Tennessee; rhetoric and composition.

Laban, Lawrence F. *Assistant Professor* Ph.D., Indiana University; British prose fiction.

Longest, George C. *Associate Professor* Ph.D., University of Georgia; Southern literature, realism.

Mangum, A. Bryant *Assistant Professor* Ph.D., University of South Carolina; early twentieth century American.

Miller, Michael I. *Assistant Professor* Ph.D., University of Chicago; linguistics.

Morse, Charlotte C. *Associate Professor* Ph.D., Stanford University; Middle English literature, Medieval studies.

Pendleton, James D. *Professor* M.A., University of North Carolina; playwriting.

Priebe, Richard K. *Associate Professor* Ph.D., University of Texas at Austin; African literature, folklore.

Reynolds, Elizabeth R. *Professor* Ph.D., University of South Carolina; Medieval studies.

Sange, Gary R. *Assistant Professor* M.F.A., University of Iowa; poetry writing, modern poetry.

Scura, Dorothy M. *Associate Professor* Ph.D., University of North Carolina, Chapel Hill; American literature, composition.

Sharp, Nicholas A. *Assistant Professor* Ph.D., Ohio State University; Renaissance.

Smith, David J. *Professor* Ph.D., Ohio State University; creative writing, American literature.

Whitesell, J. Edwin *Professor Emeritus* Ph.D., Harvard University.

Woodlief, Ann M. *Assistant Professor* Ph.D., University of North Carolina; American literature.

TEACHER EDUCATION FACULTY

- Baker, Stanley E. *Associate Professor* Ed.D., Teachers College Columbia University; student/teacher interaction during reading instruction, reading habits and attitudes of reading teachers.
- Boraks, Nancy *Associate Professor* Ph.D., University of Colorado; peer impact on learning, ethnographic study of adult learning.
- Brittain, Mary M. *Assistant Professor* Ph.D., University of Miami; psycholinguistics of reading, assessment of reading achievement.
- Duncan, Patricia H. *Associate Professor* Ed.D., University of Georgia; research in written composition in the elementary grades, perceptual factors and reading.
- Goggin, William F. *Associate Professor* Ed.D., University of Virginia; teaching writing.
- McLeod, Alan M. *Professor* Ed.D., University of Virginia; adolescent literature (teaching literature), teaching writing.
- Richardson, Judy S. *Assistant Professor* Ph.D., University of North Carolina; reading in content areas, remedial and beginning secondary and adult readers.
- Tarter, Martin A. *Associate Professor* Ed.D., University of Virginia; photography and teaching social studies and the humanities (visual literacy and heightened awareness), economic education and dealing with controversial issues.

The Department of English, in conjunction with the Division of Teacher Education, offers a program leading to a Master of Arts degree in English/English Education with four areas of emphasis or concentration.

The program provides maximum flexibility by allowing each student, in consultation with the student's graduate committee, to select the concentration which will best develop the student's competence in those areas most relevant to scholarly and professional objectives.

Programs leading to the Master of Arts degree in English/English Education:

1. **TEACHING WRITING**—designed for the candidate who is seeking intensive work in both writing and teaching expository prose.
2. **INTERDISCIPLINARY HUMANITIES**—designed for the candidate who is seeking a broad knowledge of the literature of several cultures. (For courses available in this option see the director of graduate studies in English.)
3. **ENGLISH EDUCATION**—designed for the candidate who is teaching, or who

plans to teach, in middle and secondary schools. Candidates must meet certification regulations prior to graduation.

4. **LITERATURE OR LITERATURE AND LINGUISTICS**—designed for the candidate who desires intensive work in English or American literature or linguistics beyond the bachelor's level, or for the candidate who plans to pursue the Ph.D. degree in any of these fields.

ADMISSION REQUIREMENTS

In addition to the general requirements for admission to graduate programs in the School of Graduate Studies (Part I of this bulletin), the College of Humanities and Sciences, and the School of Education, the following requirements, established by the English/English Education Graduate Committee, represent the minimum acceptable standards for admission:

1. A baccalaureate degree in an area appropriate to the degree program;
2. A grade-point average that is indicative of the applicant's ability to pursue successfully a graduate degree;
3. Three recommendations from persons who are qualified to give information concerning the applicant's probable success in graduate school; and
4. Completion of the Graduate Record Examinations.

DEGREE REQUIREMENTS

The English/English Education program consists of a minimum of 30-33 semester credits. After these credits have been attained, students shall be examined over their courses and research as the Graduate Committee recommends. Students may also wish to present a thesis or project, credit for which shall be determined by the Graduate Committee.

GRADUATE COURSES IN ENGLISH (ENG)

531 Literary Criticism. Semester course; 3 lecture hours. 3 credits. A study of the fundamental concepts involved in the practice of criticism. Some attention is given to the historical development of criticism, but the primary focus is on its methods and aims.

553 Studies in Linguistics. Semester course; 3 lecture hours. 3 credits. A general introduction to one area of

linguistic study, such as pronunciation, grammar, stylistics, dialects, usage standards, lexicography, onomastics, or semantics. May be repeated for credit.

561 Medieval Literature. Semester course; 3 lecture hours. 3 credits. A survey of major works of British literature in the Middle Ages with some attention to continental influences upon both Old English and Middle English works. The study will include poetry, prose, and drama from *Beowulf* to *Morte d'Arthur*. Some reading in modern English translation, some in Middle English.

563 Renaissance Literature. Semester course; 3 lecture hours. 3 credits. A survey of British poetry, prose, and drama written in the sixteenth and seventeenth centuries. Attention will be divided among major figures—such as More, Marlowe, Spenser, Shakespeare, Donne, Jonson, Milton, and minor authors.

565 Eighteenth Century and Romantic British Literature. Semester course; 3 lecture hours. 3 credits. A survey of British literature in the eighteenth and early nineteenth centuries. Readings of poetry, drama, and prose in the successive eras of Pope, Johnson, Burns, and Wordsworth.

567 Victorian and Modern British Literature. Semester course; 3 lecture hours. 3 credits. A survey of the literature of Victorian and twentieth century Britain. Major figures such as Carlyle, Tennyson, Browning, Arnold, Dickens, Eliot, Newman, Conrad, Joyce, Yeats, Shaw, and Auden will be the main focus of the course. Minor figures, especially as they represent literary movements or transitions in style or subject, will also be considered.

571 American Literature I. Semester course; 3 lecture hours. 3 credits. A survey of the literature of the United States from the Puritan period through the Romantic period.

572 American Literature II. Semester course; 3 lecture hours. 3 credits. A survey of the literature of the United States from the Age of Realism through the Contemporary period.

600 Advanced Writing and Research Reporting. Semester course; 3 workshop hours. 3 credits. The study and practice of advanced academic and professional writing and research reporting techniques. The course will focus on preparation of such projects as technical reports, theses and dissertations, grant proposals, and articles for publication in either humanistic or scientific disciplines. The course will be addressed to the specific fields of the students enrolled.

605 Introduction to Literary Scholarship. Semester course; 3 lecture hours. 3 credits. An introduction to the forms and practice of modern literary research and criticism. Attention will be paid to bibliographical and textual criticism and to the most commonly employed approaches of literary historians and critics in English and American literature.

611 The Writer in His Own Time. Semester course; 3 lecture hours. 3 credits. A study of the biographical, intellectual, and sociological influences on a selected British or American writer and his work. The course is designed to discover how the external factors of a

writer's life are absorbed and transmuted into art by drawing upon the resources of other disciplines when relevant. May be repeated for credit.

614 Major Works of Literature. Semester course; 3 lecture hours. 3 credits. A study of the aesthetic backgrounds, composition, and continuing interpretation of a selected work of English or American literature generally regarded as a classic. The intent of the course is to comprehend as fully as possible the literary work of art through studying the aesthetic influences upon it and by applying various critical approaches to it. May be repeated for credit.

617 Major Literary Modes. Semester course; 3 lecture hours. 3 credits. A study, through the analysis of selected literary works of several genres, of modes which are useful to understand and judge literature. The study may draw upon the literature of many nations in English translation. The following modes are examples of those which may be studied: the heroic mode, the tragic mode, the comic mode, the ironic mode. May be repeated for credit.

620 Patterns in Literary Thought. Semester course; 3 lecture hours. 3 credits. A study of significant recurring intellectual attitudes and concepts which have found expression in literature and shaped the development of literary style and thought. The study will draw upon the literature of many nations in English translation. May be repeated for credit.

624 Literature in Society. Semester course; 3 lecture hours. 3 credits. A study of the ways in which literature often reflects, supports, and influences political and philosophical movements in society. Creative literature—primarily English and American—will be studied in terms of its response to or effect upon social issues. May be repeated for credit.

627 Literary Genre. Semester course; 3 lecture hours. 3 credits. A study of a literary genre, such as poetry, fiction, or drama. May be repeated for credit.

635 Theories of Rhetoric and Composition. Semester course; 3 lecture hours. 3 credits. A study of the contemporary research in rhetorical theory and issues in teaching composition. There is emphasis on both research, including bibliography and design, and practical application.

651 Topics in Teaching Composition. Semester course; 1-3 lecture hours. 1-3 credits. A course for the examination of a specialized issue, topic, or problem in teaching composition.

661 Themes in Interdisciplinary Studies. Semester course; 3 lecture hours. 3 credits. A study in depth of a theme, topic, or concept involving two or more disciplines. May be repeated for credit.

692 Independent Study. 1-3 hours. Variable credit; maximum six credits. To be offered each semester. Prerequisite: permission from department chairman. For students in English/English Education to pursue, in depth, a particular problem or topic about which an interest or talent has been demonstrated.

798-799 Thesis. Continuous course. 1-3 credits per course. Credits and hours to be arranged. Preparation

274 Interdisciplinary and Cooperatively Offered Graduate Degrees

of a thesis or project based on independent research or study and supervised by a graduate advisor.

SELECTED UNDERGRADUATE COURSES

After consultation with the student's advisor, a graduate student may take an undergraduate course listed below if the student has not previously taken a course covering the subject matter. No more than two 400-level courses from this list may be used toward the graduate degree. Consult the *Academic Campus Undergraduate Bulletin* for a description of the courses.

ENG 401 Shakespeare
ENG 402 Chaucer
ENG 403 Milton
ENG 446 Nonstandard Urban Dialects
ENG 449 Introduction to Linguistics
ENG 450 Transformational Grammar
ENG 451 History of the English Language
ENG 452 Teaching English as a Foreign Language

GRADUATE COURSES IN ENGLISH

EDUCATION (EDU, ENE, or REA) For descriptions of these and other appropriate education courses see listings under School of Education.

EDU 549 Developmental Reading
EDU 681 Investigations and Trends in Teaching—English
EDU 700 Supervised Externship—English
EDU 701 Thesis
ENE 601 Young Adult Literature
REA 601 Psycholinguistics and the Language Arts Curriculum
REA 602 Teaching Reading to Adults
REA 604 Reading Instruction in the Content Areas

CROSS LISTED COURSES IN ENGLISH/EDUCATION (ENG/ENE)

631 Teaching English To Minority Groups. Semester course; 3 lecture hours. 3 credits. A study of the problems confronted when teaching English to students from minority groups, with attention given to the importance of non-standard dialects and of preserving cultural uniqueness. Some emphasis will be placed on the student for whom English is a second language.

632 Applied English Linguistics. Semester course; 3 lecture hours. 3 credits. Application of linguistics theories and methods to selected teaching problems, such as teaching English as a second or foreign language, or teaching standard English to students who speak different dialects. May be repeated for credit.

636 Teaching Composition. Semester course; 3 lecture hours. 3 credits. A study of the traditional and modern instructional strategies for teaching composition. The

validity of strategies will be tested in the student's own writing.

637 Mass Media and the Teaching of English. Semester course; 3 lecture hours. 3 credits. A study of the use of mass media in the English classroom. Emphasis will be on teaching methods designed to take advantage of the students' awareness of the media. Special attention will be given to television and film.

643 Teaching Basic Writing Skills. Semester course; 3 lecture hours. 3 credits. Emphasis on developing the student's ability to teach fundamental writing skills, including such topics as diagnosis of writing problems, strategies for correcting problems, and methods for evaluating progress.

694 Internship in Teaching Writing. Semester course; 1 lecture and 6 practicum hours. 3 credits. Observation and practice of instructional techniques in writing courses. By special arrangement the practicum may be done at a community college or other non-university setting.

Master of Science Program in Gerontology

FACULTY

Arling, Gregory *Associate Professor (Virginia Center on Aging, Director)*¹ Ph.D., University of Illinois; social psychology, family support systems, health care policy.

Egelhoff, William F. *Assistant Professor* M.B.A., Harvard Business School; business administration, theology of aging, political issues in aging.

Harkins, Elizabeth B. *Assistant Professor (Virginia Center on Aging and Department of Health Administration)*¹ Ph.D., Duke University; evaluation research long-term care, health manpower.

Harkins, Stephen *Associate Professor* Ph.D., University of North Carolina; pain and age, memory changes with age, evoked potentials.

McAuley, William J. *Assistant Professor (Virginia Center on Aging)*¹ Ph.D., Pennsylvania State University; demography of aging, housing, formal and informal support systems.

Osgood, Nancy J. *Assistant Professor* Ph.D., Syracuse University; leisure and aging, retirement.

Parham, Iris A. *Associate Professor and Chairman of the Department of Gerontology* Ph.D., University of Southern California; cognitive changes with age, depression.

Romaniuk, Jean G. *Assistant Professor (Virginia Center on Aging)*¹ Ph.D., University of Wisconsin-Madison; creativity, evaluation research.

Romaniuk, Michael *Assistant Professor* Ph.D., University of Wisconsin-Madison; reminiscence, mental health, counseling.

Williams, J. Sherwood *Associate Professor (Department of Sociology and Anthropology)*¹ Ph.D., Washington State University; sociology.

¹Department in parentheses indicates joint appointment.

The gerontology curriculum is a multidisciplinary program established in 1976 which offers the Master of Science degree. The program is situated in the School of Graduate Studies to utilize professional assistance from departments on both campuses.

The major purpose of the program is three-fold: (1) to train qualified professionals to work in administrative, planning, service delivery, and instructional/staff development positions in programs and services for the elderly at the national, state, and local levels; (2) to provide an opportunity for those studying in other disciplines, and whose work will encompass service to the aged, to integrate their own training with a comprehensive knowledge/understanding of the aging process; and (3) to stimulate the design and execution of gerontological research across multiple disciplines.

There are six concentration areas in gerontology:

EDUCATION TRACK—This area of concentration is designed for students interested in teaching/training careers in gerontology. Students electing this track will be prepared to provide instruction to university or community college students, the lay public, professional service providers, and older people.

HEALTH CARE ORGANIZATION AND PLANNING TRACK—(In conjunction with the Department of Health Administration) Upon completing this track, students will have a foundation of knowledge in health care organization, health planning, health policy, and a macro perspective of the financing of health care. In addition, students will have developed skills in policy analysis and the use of economic tools. Finally, students will broaden their understanding of the political, legal, and ethical issues involved in health care organization and planning.

PSYCHOGERIATRIC TRACK—This area of concentration, developed jointly with the Department of Psychology, is designed for students interested in working with those older adults and their families who are experiencing psychological difficulty. Students electing this track will be prepared to provide assistance directly to the elderly and their families as well as to consult and train professional and paraprofessionals to provide more effective mental health services. Train-

ing is provided through a combination of specialized didactic instruction and structured field experience in providing direct services, consultation, and education.

PUBLIC ADMINISTRATION TRACK—Students who elect to pursue courses in the public administration track, developed jointly with the Department of Public Administration, will, after completion of course work, be able to plan, organize, report, control, and budget for public programs in aging. Grant writing and program evaluation skills will be developed as well.

SOCIAL SERVICES TRACK—This track concentrates on developing specialized knowledge and skills in the provision of services to the elderly; basic understanding and skills in at least one method of social work practice; commitment and ability to participate in the development of strategies and policies relevant to amelioration of social problems of the elderly; ability to integrate and use in practice knowledge of individual behavior and social structure with particular reference to the needs of the elderly.

RESEARCH TRACK—This track is designed for students who would ultimately like to pursue a Ph.D. in the social/behavioral sciences. (All students who elect the research track must complete a thesis.) Students will obtain a strong background in experimental psychology research design and methodology and a broad background in life-span developmental theory.

The 42-hour degree program includes 18-21 hours of courses in gerontology, 18 hours in the chosen concentration area, and six credits for thesis (or a thesis option).

ADMISSION POLICY

The program is open to qualified students who have earned a baccalaureate degree from an accredited college or university or the equivalent, maintained a minimum grade-point average of 3.0 and have satisfactory scores on the Graduate Record Examinations. A successful work experience may strengthen the admission credentials of applicants with marginal records.

Because of the diversity of undergraduate majors, candidates for the gerontology program must present evidence of successful completion of *undergraduate* courses in the following areas:

1. biological science—minimum of six semester hours
2. psychology—minimum of three semester hours
3. sociology/anthropology-social work—minimum of three semester hours
4. statistics, research methods, or equivalent—minimum of three semester hours (topics covered in this undergraduate course should be equivalent to those outlined for Statistics 213, 214 in the *Academic Campus Undergraduate Bulletin*).

Candidates for admission who do not meet these requirements will be expected to complete the required undergraduate course work or to pass challenging examinations by the end of the first year. Please see Part I of this bulletin for admission requirements and procedures.

TRANSFER AND WAIVER OF COURSE CREDITS

Students who have completed graduate work in other graduate departments, whether at Virginia Commonwealth University or another university, may transfer no more than 12 credit hours work at "B" level if such work is considered relevant by the Program Admissions Committee. Also, a maximum of six hours of graduate credits accrued at a "B" level as a "special student" at Virginia Commonwealth University may be applied to the degree upon recommendation of the Program Admissions Committee.

Transfer credits for graduate work at other institutions will be evaluated at the time of full admission to the program. To have credits transferred, students are required to prepare a synopsis of each graduate course that is to be transferred for review by the faculty. Each synopsis will include the name of texts used in the course and a specific listing of topics and material covered. Students may also apply for waivers of specific requirements in a similar manner.

MASTER'S THESIS

1. The master's thesis is an option for students entering with a bachelor's degree. Students may elect either a six-credit thesis or six hours of graduate course work to meet the 42-hour requirement.

2. Each student shall arrange with a member of the gerontology program to serve as the chairman of the thesis committee. With the chairman's approval, at least two additional committee members will be selected. At least two of the members must be from the gerontology program.

The thesis chairman will monitor and advise during thesis development. The student will take the major role in actual data collection. The thesis should be a publishable piece of research that makes some contribution to the field of gerontology.

WRITTEN COMPREHENSIVE EXAMINATION

A written comprehensive examination is required after completion of all required course work and before the student begins a practicum (field experience).

The comprehensive examination will be scheduled three times a year (early in the fall and spring semesters and once in the summer.)

PRACTICUM (FIELD EXPERIENCES)

Field experiences, with the supervision arranged by the director and program faculty, constitute an additional requirement. These experiences are intended to develop practical understanding, skills, attitudes, and values essential for working with the aged in a variety of settings.

The practicum will involve a 600-hour placement (one semester full-time or two semesters half-time). Each student must submit a practicum proposal (prepared with the assistance of the advisor) which must be approved prior to beginning the practicum.

For those already employed in the field of gerontology, an approved special project may be substituted for the field experience placement. Those students who are working full-time in a job outside the field of aging may also submit a proposal for review which may allow for their continued employment, yet fulfilling this important requirement.

GRADUATE COURSES IN GERONTOLOGY (GTY)

All students must successfully complete the following 21 hours of core courses:

601 Biological and Physiological Aging. 3 credits.

Biological theories of aging: cellular, physical, systemic, and sensory change; health maintenance.

602 Psychology of Aging. 3 credits. Psychological adjustment in old age; special emphasis on personality, cognitive, and emotional development; life-crises associated with the aging process. (Students must complete Social Sciences Research Methods before taking this course).

603 Social Science Research Methods Applied to Gerontology. 3 credits. Application of social science methods and techniques to study of the aged: data sources, types of problems encountered; data analysis; research reporting; use of research findings.

604 Problems, Issues, and Trends in Gerontology. 3 credits. Application of knowledge in analysis of problems confronting aged persons; social issues and legislation; service delivery programs; current trends in gerontology.

605 Social Gerontology. 3 credits. This course will focus on the socio-psychological and sociological aspects of aging. Various socio-psychological and social theories of aging will be discussed. The course will provide a broad overview of several general topics such as the demography of aging, politics and economics of aging, and cross-cultural aspects of aging. The course will offer an in-depth analysis of particular role changes which accompany aging (i.e., retirement, widowhood, institutionalized).

606 Aging and Human Values. 3 credits. Identification and analysis of value systems of the aged, exploration of religious beliefs; death and dying; moral, ethical and legal rights; human values and dignity.

Elective Courses

510 Introduction to Gerontology. 3 credits. A survey of the field of aging with attention to physical, psychological, social, economic, and cultural ramifications of age.

612 Recreation, Leisure, and Aging. 3 credits. An analysis of the quality and quantity of leisure in maximizing the quality of life for the older person. Focus will be placed on concepts of leisure; the interrelationship of leisure service delivery systems and other supportive services; the meaning of leisure to the elderly in the community and within institutional settings; and innovative programming.

615 Aging and Mental Disorders. 3 credits. The course deals with common psychological disorders and problems of late life, their etiology, methods of evaluating psychological status, and intervention strategies which have been used successfully with older persons. Topics include epidemiology of psychological disorders and mental health service utilization; late-life stressors and crises; psychology of health, illness, and disability; techniques and procedures in the evaluation of the older adult; functional and organic disorders; institutionalization; individual, group, and family therapy; behavioral techniques; peer counseling and crisis intervention; and drugs and the elderly.

616 Maintenance and Rehabilitation in Late Life. 3 credits. Considers practical approaches to maintaining function and use of daily activities, simple procedures,

and techniques in counteracting common physical changes prevalent in later life.

641 Survey of Psychological Assessment and Treatment of the Older Adult. 3 credits. A combination didactic and skills training course; review of major treatment strategies and techniques for utilization with the older adult client with emphasis on group, individual, and paraprofessional delivery system; evaluation of crisis intervention and consultation team approaches; lectures, demonstrations, and classroom practice of actual treatment techniques.

642 Practicum in Clinical Geropsychology. 3 credits. An initial practicum geared as an entry to the team practicum experience; focus on familiarizing the student with mental health service delivery systems for the elderly in the Richmond community; rotation through a limited number of facilities such as nursing homes, retirement centers, nutrition sites, emergency hotline services for the elderly, and various agencies involved in de-institutionalization; possible extended placement in a particular facility.

691 Topical Seminar. 3 credits. Seminars on specialized areas of gerontological interest. Examples of special topic courses taught in previous years: •Aging and the Black Community, 3 credits. Systematic overview of patterns of aging among blacks; economics, family patterns, residential environment. •Nutrition and Aging, 3 credits. Focus on nutritional problems of the elderly, physiological and psychological effects of diet modifications. •Psychophysiology and Neurobiology of Aging, 3 credits. Focuses on age differences and changes in anatomy and physiology of the autonomic and central nervous systems. •Psychology of Health and Health Care, 3 credits. Focuses on factors in the etiology, course and treatment of illness; patient/practitioner relationship; patient compliance, psychosocial issues in terminal care. •Community/Community Services and the Aged, 3 credits. A conceptual/theoretical overview of community focusing on the ecological, psychological, and social dimensions of community and on communities of the aged.

692 Independent Studies. 1-3 credits. Directed independent study in depth of a particular problem or topic in gerontology about which an interest or talent has been demonstrated.

798-799 Thesis. 3-6 credits. A research study of a topic or problem approved by the thesis committee and completed in accordance with the acceptable standards for thesis writing.

Master of Science Program in Geriatric Physical Therapy

Geriatric Physical Therapy is a joint program offered by the Department of Physical Therapy and the Master of Science program in Gerontology culminating in a *Master of Science* degree in Physical Therapy with a specialty in Geriatric Physical Therapy.

FACULTY

The combined graduate faculties of physical therapy and gerontology.

ADMISSIONS AND GENERAL ACADEMIC POLICY

See School of Graduate Studies rules and Department of Physical Therapy.

PURPOSE

Graduates may prepare for positions in teaching, administration, clinical practice, or research related to the problems of the aged population, including positions as chief physical therapists in any kind of facility dealing with geriatric patients, where they could provide leadership in service, research, and teaching.

CURRICULUM

Core Curriculum:	Credits
PHT 590 Physical Therapy Seminar (2 semesters)	2
PHT 591 Research Process	2
GTY 601 Biological and Physiological Aging	3
GTY 602 Psychology of Aging	3
GTY 605 Social Gerontology	3
BIS 521 Statistical Principles or BIS 511-12	3-6
PHT 520 Clinical Specialty Practicum	3-9
PHT 690 Research in Physical Therapy	9-12
	28-40

Electives:	Credits
GTY 604 Problems, Issues, and Trends in Gerontology	3
GTY 606 Aging and Human Values	3
GTY 692 Independent Study	1-3
PHT 501 Electromyographic Kinesiology	3
PHT 502 Biomechanics	3
PHT 505 Pathokinesiology ***	4
PHT 506 Therapeutic Kinesiology ***	3
PHT 540 Special Topics in Physical Therapy	1-4
AHP 573 Teaching in Health Professional Schools	3
AHP 574 Health Teaching Practicum	1-6
AHP 582 Supervision in Allied Health Professions	3
AHP 583 Administrative and Supervisory Practicum	1-9
HCM 510 Health Care Organization and Aging	3
*** Highly recommended	
Minimum credits for graduation: 48 credits	

The clinical practicum (PHT 520), the thesis research (PHT 690) and, if elected, the administrative and supervisory practicum (AHP 583) will be done at the Chesterfield County Nursing Home. The teaching practicum (AHP 574), if elected, will be done in the undergraduate physical therapy cur-

riculum, both on campus and at the nursing home. All practica will be supervised by academic faculty.

The thesis committee will include, as a minimum, two physical therapy faculty and one gerontology faculty. Basic science, medical, or other faculty may be added when warranted by the thesis topic.

Students will meet all general requirements for graduation specified in the *Graduate Bulletin* of Virginia Commonwealth University and the School of Allied Health Professions.

Certificate Program in Aging Studies

The Certificate in Aging Studies program was designed primarily to meet the needs of persons who are already working with the elderly but who have no academic training in gerontology. The certificate program provides students with a comprehensive overview of gerontology and stimulates the application of gerontological research to problems in applied areas.

The certificate program is also a minor option for graduate students in other disciplines.

REQUIREMENTS FOR ADMISSION

Candidates for admission into the Certificate Programs in Aging Studies would offer the following credentials:

A baccalaureate degree from an accredited college or university or its equivalent.

An acceptable grade-point average.

PROGRAM OF STUDIES

The certificate program of studies would require successful completion of 17 credit hours of work comprised of the following courses now offered in the gerontology graduate curriculum:

1. The Biology of Aging, Psychology of Aging, and Social Gerontology will form the basic core of the certificate program.
2. Following the completion of these three core courses, students may choose two elective gerontology courses after consultation with their faculty advisors. Advisors counsel students as to the

courses which would best suit their educational training needs. Students may choose from Aging and Human Values; Topical Seminar; Independent Studies; Problems, Issues, and Trends in Gerontology; Recreation, Leisure, and Aging.

3. In addition to the completion of these prescribed courses, each candidate for a Certificate in Aging Studies would be required to satisfactorily complete a project in gerontology on a subject approved by the faculty. This project may be a comprehensive literature review, a research project, and training or demonstration project. Students would register for a two-credit course in Independent Studies (GTU 692).

AWARDING OF THE CERTIFICATE

Upon successful completion of the total program here described, as well as maintaining a 3.0 average, students are awarded a Certificate in Aging Studies.

RELATIONSHIP TO THE M.S. PROGRAM IN GERONTOLOGY

The Certificate in Aging Studies program is designed to meet the needs of those individuals who desire graduate training in gerontology but who do not desire the full completion of the master's program. This program is complementary to the M.S. program. Certificate students who wish to enter the M.S. program must make formal application and abide by the admission requirements outlined in this bulletin.

Graduate Programs in Statistical Areas

See degree programs or tracks in statistics in the following departments or programs:

Biostatistics (M.S., Ph.D.)—School of Basic Sciences

Master of Science Degree in Business (concentration in Quantitative Methods)—School of Business

Mathematical Sciences (M.S. with specialization in statistics or statistical computing)—College of Humanities and Sciences

GRADUATE COURSES IN STATISTICS

Biostatistics (BIS)

BIS 511-512	Methods of Biostatistical Analysis
BIS 515	Biostatistical Data Management
BIS 516	Biostatistical Consulting
BIS 521	Biostatistical Principles of Health Care Information
BIS 524	Biostatistical Computing
BIS 530(S)	Elements of Biometry
BIS 537	Sampling
BIS 538	Epidemiology and Population Research
BIS 541-542	Theory of Probability and Biostatistical Inference
BIS 546	Linear Biostatistical Models
BIS 547	Nonparametric Statistics
BIS 590	Biostatistics Seminar
BIS 600	Special Topics in Biostatistics
BIS 641	Advanced Biostatistical Inference
BIS 642	Methods of Multivariate Analysis
BIS 650	Design and Analysis of Response Surface Experiments
BIS 690	Research in Biostatistics

School of Business

BUS 624	Statistical Elements of Quantitative Management
BUS 632	Statistical Analysis
BUS 645	Operations Research
BUS 648	Managerial Decision Making
BUS 656	Applied Multivariate Methods
BUS 669	Forecasting Methods
BUS 677	Topics in Operations Management: Quality control or other selected topics
BUS 790	Doctoral Seminar
ECO 612	Econometrics

Mathematical Sciences

CSC 500	Computer Methods for
---------	----------------------

280 Interdisciplinary and Cooperatively Offered Graduate Degrees

	Research (Programming and Survey of Statistical Packages such as SAS and SPSS)	STA 613-614	Stochastic Processes
		STA 623	Discrete Multivariate Analysis
		STA 691	Topics in Statistics
MAT 527-528	Mathematical Foundations of Operations Research		
MAT 603-604	Advanced Probability Theory	Psychology	
STA 503	Introduction to Stochastic Processes	PSY 609	Design of Psychological Experiments
STA 513-514	Mathematical Statistics	PSY 627	Statistics in Psychological Research
STA 523	Nonparametric Statistical Methods		
STA 533	Applied Linear Regression	Sociology	
STA 543-544	Statistical Methods	SOC 608	Advanced Statistical Methods
		SOC 623	Causal Analysis



PART XIII—Board, Administration, and Faculty.

BOARD OF VISITORS Appointed by the Governor of Virginia

Daniel T. Balfour, B.A., J.D.
Richmond
Mrs. FitzGerald Bemiss, B.S.
Richmond
Thomas E. Butt, B.A., D.D.S.
Wytheville
Custis L. Coleman, B.S., M.D.
Richmond
Benjamin W. Cotten, A.B., J.D., M.A.
McLean
F. Willson Craigie, Jr., B.B.A.
Richmond
Sigsby W. Gayle, M.D.
Richmond
Robert J. Grey, B.A.
Richmond
Douglas H. Ludeman, B.S.
Rector, Richmond
Philip B. Morris, B.S., LL.B.
Richmond
Harold I. Nemuth, M.D.
Secretary, Richmond
William G. Reynolds, Jr., B.A., LL.B.
Richmond
W. Roy Smith, B.S.
Vice-Rector, Petersburg
Mrs. Charles G. Thalhimier, B.A.
Richmond
Anne Marie Whittemore, A.B., LL.B.
Richmond
Jack H. Wyatt, B.S.
Richmond

UNIVERSITY ADMINISTRATION

Edmund F. Ackell, B.S., D.M.D., M.D.
President

John Andrako, B.S., M.S., Ph.D.
Assistant Vice-President for Health Sciences
Donald C. Bruegman, B.B.A., M.S.
Vice-President for Administration
Jeffrey S. Cribbs, B.G.S., M.C.
Assistant Vice-President for Planning and Budget
Arnold P. Fleshood, B.A., M.S., Ed.D.
Associate Vice-President for Academic Affairs
James G. Guerdon, B.S., M.B.A.
Vice-President for Finance
Wayne C. Hall, B.A., M.S., Ph.D.
Provost and Vice-President for Academic Affairs
James R. Johnson, B.S.
Assistant Vice-President for Financial Operations
John H. McGrath III, A.B., M.A., Ph.D.
Associate Dean of Graduate Studies
William C. Price, B.S.Ed., M.S., Ph.D.
Assistant Vice-President for Academic Affairs
Thomas A. Pyle, B.A., M.S.
Executive Director for University Advancement
David L. Ross, B.S., LL.B.
Legal Advisor to the President and Board of Visitors
Louis C. Saksen, B.Ar., M.Ar., M.S.
Assistant Vice-President for Facilities Management
John J. Salley, D.D.S., Ph.D., D.Sc.
Vice-President for Research and Dean of Graduate Studies
Howard L. Sparks, A.B., M.A., Ed.D.
Associate Vice-President for Academic Affairs
Ralph M. Ware, Jr., B.S.

Special Assistant to the President for
Legislative Relations

Richard I. Wilson, B.A., M.A., Ed.D.

Vice-President for Student Affairs

Lauren A. Woods, B.A., M.D., Ph.D.

Vice-President for Health Sciences

DEANS

Elske v.P. Smith, B.S., M.S., Ph.D.

Dean, College of Humanities and Sciences

Thomas C. Barker, B.S., M.A., Ph.D.

Dean, School of Allied Health Professions

Murry N. DePillars, B.A., M.A., Ph.D.

Dean, School of the Arts

S. Gaylen Bradley, B.A., B.S., M.S., Ph.D.

Dean, School of Basic Sciences

J. Curtis Hall, A.B., M.S., Ed.D.

Dean, School of Business

Laurin L. Henry, B.A., M.A., Ph.D.

Dean, School of Community and Public
Affairs

James E. Kennedy, B.S., D.D.S., M.S.

Dean, School of Dentistry

Charles P. Ruch, A.B., M.A., Ph.D.

Dean, School of Education

Jesse L. Steinfeld, B.S., M.D.

Dean, School of Medicine

Joan S. Brownie, R.N., B.S., M.S., Ph.D.

Dean, School of Nursing

John S. Ruggiero, B.S., M.S., Ph.D.

Dean, School of Pharmacy

Grace E. Harris, B.S., M.A., M.S.W., Ph.D.

Dean, School of Social Work

ASSOCIATE AND ASSISTANT DEANS

William A. Glynn, B.S., M.S., Ph.D.

Associate Dean, College of Humanities and
Sciences

John H. Borgard, A.B., M.A., Ph.D.

Assistant Dean, College of Humanities and
Sciences

David W. Hartman, B.A., M.A., Ph.D.

Assistant Dean, College of Humanities and
Sciences

Benjamin T. Cullen, Jr., B.S., M.A., Ed.D.

Associate Dean, School of Allied Health
Professions

Robert F. Hester, B.S., M.A.

Associate Dean, School of the Arts

Thomas H. DeSmidt, A.A., B.F.A., M.F.A.

Assistant Dean, School of the Arts

William L. Dewey, B.S., M.S., Ph.D.

Associate Dean, School of Basic Sciences

Moustafa, H. Abdelsamad, B. Com., M.B.A.,
D.B.A.

Associate Dean, School of Business

Glenn H. Gilbreath, B.S., M.S., Ph.D.

Assistant Dean, School of Business

John D. Lambert, B.S., M.S., Ph.D.

Associate Dean, School of Business

Dennis O'Toole, B.A., M.S., Ph.D.

Associate Dean, School of Business

Alvin J. Schexnider, B.A., M.A., Ph.D.

Associate Dean, School of Community and
Public Affairs

E. Davis Martin, Jr., B.S., M.S., Ed.D.

Assistant Dean, School of Community and
Public Affairs

James E. Hardigan, B.A., M.B.S., Ph.D.

Assistant Dean, School of Dentistry

Richard R. Ranney, D.D.S., M.S.

Assistant Dean, School of Dentistry

James H. Revere, Jr., B.A., D.D.S.

Associate Dean, School of Dentistry

R. Bruce Rutherford, D.D.S., Ph.D.

Assistant Dean, School of Dentistry

F. B. Wiebusch, B.B.A., D.D.S.

Assistant Dean, School of Dentistry

John S. Oehler, B.A., M.A.T., Ed. D.

Acting Assistant Dean, School of Education

A. Gaynelle Whitlock, B.A., M.A., Ph.D.

Assistant Dean, School of Education

George C. Canavos, B.S., M.S., Ph.D.

Assistant Dean, School of Graduate Studies

William L. Dewey, B.S., M.S., Ph.D.

Assistant Dean, School of Graduate Studies

William R. Stewart, B.F.A., M.Ed., D.Ed.

Assistant Dean, School of Graduate Studies

Albert J. Wasserman, M.D.

Executive Associate Dean, School of
Medicine

W. Kenneth Blaylock, B.S., M.D.

Associate Dean, School of Medicine

John T. Farrar, M.D.

Associate Dean, School of Medicine

Warren W. Koontz, Jr., M.D.

Associate Dean, School of Medicine

Frederick Spencer, M.D.

Associate Dean, School of Medicine

Reuben B. Young, B.S., M.D.

Associate Dean, School of Medicine

Thomas M. Rose, M.S.

Assistant Dean, School of Medicine

Ethelyn E. Exley, R.N., Ed.D.

Assistant Dean, School of Nursing

Margaret R. Spaulding, R.N., Ph.D.

Assistant Dean, School of Nursing

Graham C. Windridge, Pharm.D., Ph.D.

Assistant Dean, School of Pharmacy

C. Eugene White, B.S. Pharm., J.D.

Assistant Dean, School of Pharmacy

Robert L. Schneider, B.A., M.S.W., D.S.W.

Assistant Dean, School of Social Work

UNIVERSITY SERVICES

Charles P. Austin, B.S., M.B.A.

Director, University Computing and Information Resources

Celia K. Barnes, B.S.

Director of University Relations

Michael W. Barree, B.S., M.A.

Campus Director, Financial Aid, Academic Campus

Arlick L. Brockwell, A.B., M.Ed.

Director, MCV Gymnasium/Intramural Athletics

Bruce Chase, B.S., M.B.A., C.P.A.

Treasurer

Alexander M. Clarke, B.S., M.S., Ph.D.

Director, Central Biomedical

Instrumentation Facility

Robert L. Clifton, A.B., M.A., Ed.D.

Dean of Student Affairs, MCV

Phillip H. Coleman, D.V.M., Ph.D.

Director, Division of Animal Resources

Richard Dremuk, B.A., M.A.

Director, University Enrollment Services

James L. Dunn, B.S., M.S.

Director of Alumni Activities

William H. Duvall, B.A., M.Ed., Ed.D.

Dean of Student Affairs

Rozanne G. Epps, B.A., M.A.

Director, Evening and Summer Studies

Linda G. Fritsch, B.S., M.Ed.

Acting Associate Director, Financial Aid

Harry R. Hester, B.A.

Assistant Dean of Student Affairs and

Coordinator of University Housing

William J. Judd, B.S., M.S., Ph.D.

Acting Director of University Libraries

David R. Mathis, B.S., M.A.

Director, University Publications

Lynn A. McConnell, B.S., M.S.

Campus Director, Financial Aid, MCV

J. Craig McLean, B.A., M.S.L.S.

Assistant Director, University Libraries

Donald C. Moore

Director of Business Services

H. Stephen Moore, Jr., B.S.

Director of Employee Relations

John F. Noonan, B.A., M.A., Ph.D.

Director, Center for Improving Teaching Effectiveness

Melvin C. Shaffer

Director, Visual Education Services

F.W. Taylor III, B.S., M.S.

Controller

Mary Ann Smith, R.N.

Student Health Nurse, MCV

Charles F. Suter, Jr., B.S., M.D.

Student Health Physician, MCV

W. Loren Williams, B.S., M.A., Ph.D.

Director, Educational Planning and Development Program, MCV

INDEX OF GRADUATE FACULTY

Abdelsamad, Moustafa H.	138
Aboud, John, Jr.	138
Aceto, Mario D.	126
Ackley, Robert J.	138, 207
Adler, Martin D.	242
Adler, Stuart P.	124
Alimard, Amin	166
Allan, Richard E.	35
Ameen, David A.	138
Ames, James E., IV	35
Andrews, Robert L.	138
Apgar, Nicolas	96
Archer, Gordon L.	124
Arling, Gregory W.	274
Armour, Robert A.	271
Armstrong, Crichton	166
Astruc, Juan A.	120
Atukorala, Vimal W.	138
Auerback, Stephen M.	40
Bailey, James W.	207
Bailey, Kent C.	40
Baker, Stanley E.	210, 272
Balogun, Jacob D.	138
Balster, Robert L.	127
Banks, William L.	121
Barber, Alice L.	242
Barker, Thomas C.	67
Barnes, Robert W.	129
Barr, William H.	239
Barrell, Lorna M.	232
Barrett, C. Allen	160
Barris, Roann	57
Bass, Robert G.	31
Batty, L. Wayne	97
Bauer, David F.	35
Baumgarten, Clive M.	129
Beachan, E. Walton	271
Beale, Andrew V.	202
Beall, Larry G.	138
Beers, Carol S.	202
Beeston, John T., III	76
Brenda, Brent B.	242
Bennett, Beate H.	106
Berglund, John F.	35
Berliner, Martha D.	28, 124
Bernard, L. Diane	242
Berry, Boyd M.	271
Berry, Sam G.	138
Beverly, David P.	242
Bevilaqua, William D.	96
Biber, Thomas U.L.	129
Bick, Peter H.	124
Biggerstaff, Marilyn A.	242
Bilyeu, Landon	97
Bisken, Donald	41
Blank, Allan	97

Blanke, Robert V.	127, 131	Chinnici, Joseph P.	28, 123
Blankenship, M. Elise	202	Chlebowski, Jan E.	121
Blanks, Edwin E.	138	Choi, Sung C.	122
Blem, Charles R.	28	Ciresi, Salvatore A.	76
Bloom, Lynn Z.	271	Clamann, H. Peter	129
Bloom, Martin	242	Clark, Rhonda R.	35
Bond, Judith S.	121	Clarke, Alexander M.	129
Bonds, Maurice	88	Cleary, Stephen F.	129
Boadle-Biber, Margaret	129	Coffman, Edward N.	138
Bookin, Hedy E.	46	Coleman, Philip H.	124
Booth, Mark W.	271	Collins, James M.	121
Boots, Marvin R.	238	Collins, Judith	232
Boraks, Nancy E.	210, 272	Conrad, W. Hyrum	107
Borgard, John H.	23	Conway, Carolyn M.	28
Borzelleca, Joseph F.	127	Coppedge, Walter R.	271
Bost, William A.	202	Coppins, Richard J.	138
Bowman, John H.	138	Corazzini, Jack G.	40
Bowman, Thomas	76	Corey, Linda A.	123
Boykin, James H.	138	Corley, Karl C.	129
Bradford, James A.	104	Costanzo, Linda S.	129
Bradley, S. Gaylen	124, 127	Costanzo, Richard M.	129
Brandt, Richard B.	121	Craig, Shirley S.	120
Breindel, Charles L.	67	Craver, Samuel M.	207
Bremer, David M.	95	Creasman, Kay M.	138
Briggs, F. Norman	129	Cross, Sue S.	124, 131
Brindley, Edward C., Jr.	138	Crowe, Frank	41
Brittain, Mary M.	210, 272	Crummette, Beauty D.	232
Brown, E. Allan	41, 271	Crutchfield, George T.	25
Brown, Darrel R.	138	Cullen, Benjamin T., Jr.	67
Brown, John C.	158, 182	Dalton, Amy H.	138
Brown, Judith A.	123	Dalton, Harry P.	124, 131
Brown, Patricia J.	172	Dance, Daryl C.	271
Brown, Richard	40	Daniel, Herman C., III	138
Brown, Russell V.	28	Daughtrey, William H., Jr.	138
Brownie, Joan F.	232	Davis, Meredith	96
Buczek, Teresa A.	40	Davis, Michael D.	210
Bumgardner, James A.	104	Davis, Robert G.	210
Burns, James C.	2	Dawson, Gaye C.	138
Burton, David	86	Day, Ben	96
Busby, Doris W.	210	Degenaro, Guy J.	138
Cabral, Guy A.	124	DeMao, John	96
Caffarella, Rosemary S.	207	DeMeersman, Ronald E.	210
Callan, Mallory	96	Dennis, Rutledge M.	46
Campbell, Jewett	104	DePillars, Murry N.	53
Campbell, Kenneth	106	Deppa, Joan A.	25
Campbell, Thomas C.	138	DeSimone, John A.	129
Canavos, George C.	138	DeSmidt, Thomas H.	53
Carchman, Richard A.	127	Deurmier, Armon	160
Carle, Harold W.	97	Deveney, James K.	35
Carlton, Thomas D.	242	DeVries, George H.	121
Carlyon, Richard	96	Dewey, William L.	127
Carrier, Loran	97	Diana, Lewis	46
Carter, Robert	96	Diasio, Robert B.	127
Carter, Walter H., Jr.	122	Dintiman, George B.	210
Chandler, D.L.	94	Dixon, Clifton	95
Chau, Thuy T.	127	Donato, Gerald M.	104
Cherry, Milton	97	Donnell, Cynthia S.	97
Chichester, Florence B.	57	Dos Santos, Jose	131
Chinchilli, Vernon M.	122	Driska, Steven P.	129

286 Board, Administration, and Faculty.

Drought, Michael	104	Freed, David C.	104
Duke, Elizabeth E.	271	Freeman, Scott A.	139
Duke, Maurice	271	Freer, Richard J.	127
Duma, Richard J.	124	Fuhrmann, Barbara S.	202
Duncan, Jack A.	202	Fuhs, F. Paul	139
Duncan, Patricia H.	210, 272	Fulton, Joan L.	210
Dunn, Clarence L.	138	Gairola, C. Krishna	88
East, James M.	120	Gallagher, Charles J.	139
Eastman, Allan A.	92	Gallant, Christine C.	271
Eaves, Lindon J.	123	Gander, George W.	131
Eberly, Bruce	41	Gandy, Gerald L.	174
Eberly, Carol	41	Garner, Howard G.	202
Eckberg, Dwain L.	129	Garrettson, Lorne K.	239
Edwards, Leslie E.	129	Gates, James E.	28, 125
Egelhoff, William F.	274	Geary, David P.	160
Egle, John L., Jr.	127	Gerszten, Enrique	131
Elliott, Clifford J.	138	Gewirtz, David A.	127
Ellis, Earl F.	127	Giacobbe, George A.	202
Elson, Charles O.	124	Giebel, Peter E.	28, 125
Ely, Vivien K.	207	Gilbreath, Glenn H.	139
Elzay, Richard P.	131	Giordano, Anthony	127
Erickson, Marilyn T.	40	Glennon, Richard A.	238
Erickson, Maurice Leonard	107	Glynn, William A.	35
Escobar, Mario R.	131	Goggin, William F.	210, 272
Evans, Herbert J.	121	Goldberg, Stephen J.	120
Everett, John O.	138	Goldman, I. David	127
Exley, Ethelyn E.	232	Goodlin, John C.	107
Fabiato, Alexandre	129	Gower, Ann Renee	104
Fagan, Tom	41	Gray, George R.	139
Fair, Charles A.	25	Gray, Robert L., Jr.	139
Fairholm, Gilbert W.	158, 166	Green, Robert G.	242
Falck, Hans S.	242	Griffin, Claudius W.	271
Fallen, Nancy H.	202	Griggs, Walter S., Jr.	139
Fallon, Harold J.	127	Grogan, W. McLean, Jr.	121
Farley, Reuben W.	35	Groman, William D.	41
Farmer, David J.	158, 160	Grosenick, Leigh E.	158, 166
Farrell, Albert D.	40	Gross, Ena	210
Feher, Joseph J.	129	Groves, Barney R.	210
Feiner, Susan F.	138	Gruemer, Hanns-Dieter	131
Ferguson, Jerry T.	139	Gudas, Stephen A.	63
Ferris, Michael	86	Gulak, Morton B.	183
Field, Jerry J.	94	Gumaer, James D.	202
Fike, Dorothy J.	55	Gunter, Ben D.	94
Fine, Michael L.	28	Guzelian, Philip S.	127
Fine, Richard A.	271	Ha, Cu D.	35
Fisher, Lyman M.	131	Haar, Jack L.	120
Fisher, Robert W.	28, 124	Haas, Frederick C.	139
Flannery, David B.	123	Hadfield, M. Gary	131
Fleming, Robert S.	202	Hageman, Mary J.	160
Flint, Richard C.	88	Hague, James L.	161
Fonoroff, Allen	182	Hall, J. Curtis	139
Forbes, David C.	242	Hall, Robert E.	125
Ford, George D.	129	Ham, William T.	129
Formica, Joseph V.	124	Hambrick, Ralph S.	166
Forsyth, Donelson R.	40	Hamer, Robert M.	122
Fortune, Anne E.	242	Hamm, Robert J.	40
Francis, Gloria M.	232	Hammersley, William S.	92
Franks, David D.	46	Harber, Harlon	174
Franson, Richard C.	121	Hard, Richard	131

Hardy, Richard E.	174	Humphreys, L. Wade	139
Harkins, Elizabeth B.	67, 274	Humphreys, Neil J.	139
Harkins, Stephen	274	Hunt, Eugene H.	139
Harkness, Marguerite	271	Hylemon, Phillip B.	125
Harris, Grace E.	242	Hynson, Priscilla C.	86
Harris, Louis S.	127	Ipsen, Kent F.	92
Harris, Thomas M.	120	Iverson, Susan L.	92
Harrison, William B., III	139	Izard, Jessie V.	55
Hartman, David W.	46	Jackson, Caroline G.	120
Hartnett, John J.	40	Jackson, J. Howard	139, 207
Hartsoe, Charles E.	158, 172	Jacobs, Brian C.	207
Haver, William E.	35	Jacqmin, Nancy E.	35
Hawkes, Glenn R.	40	Janke, Robert H.	107
Hawkrigde, Fred M.	31	Jarrell, George R.	174
Hawthorne, John	92	Jarrett, Jack	97
Hayes, Johnnie R.	127	Jayne, David W.	127
Heck, J. Louis	67	Jeffrey, Jackson E.	28
Hedgepeth, Chester M.	271	Jennings, George W.	139
Helfgott, Myron	106	Jensen, T. Alan	67
Hellmuth, William F.	139	Jimenez-Vazquez, Rosa	242
Henry, Charles R.	106	Johnson, Carl	41
Henry, JoAnne K.	232	Johnson, Daniel M.	46
Henry, Laurin L.	158, 166	Johnson, James H.	120
Henry, Neil W.	35, 46	Johnson, Miles F.	28
Hephner, Thomas A.	207	Johnson, Robert E.	35
Hepler, Charles D.	239	Johnston, Charles L., Jr.	131
Heroy, John	95	Johnston, Iris W.	139, 207
Hester, Robert F.	53	Johnston, Russell A.	139
Higgins, Edwin S.	121	Johnston, Wallace R.	139
Hill, Ada D.	202	Jollie, William P.	120
Hill, Jane R.	63	Jones, Barbara	76
Hill, John P.	40	Jones, Sharon Gallagher	88
Hinchee, Annette G.	76	Judd, William J.	203
Hinchman, Madison G.	242	Kalimi, Mohammed Y.	129
Hirschman, William	41	Kallman, William M.	40
Hirt, Susanne	63	Kaplan, Alan M.	125
Hodge, Bartow	139	Karselis, Terence C.	55
Hodges, Bob S., III	139	Katz, M. Barry	88
Hodges, James O.	211	Keefe, William E.	125
Hodges, Raymond	107	Keesee, C. Gordon, Jr.	203
Hoffer, George E.	139	Keeney, Homer	41
Holley, Charles L.	139	Kennamer, J. David	25
Holloway, C. Thomas	107	Keohane, Diane C.	76
Holmes, Raymond, T.	139	Keve, Paul W.	161
Holmes, W. Michael	123, 125	Kevorkian, Richard E.	104
Holsinger, James W.	83	Kielhofner, Gary W.	57
Honnold, Julie A.	46	Kier, Lemont B.	238
Hooke, James F.	40	Kiesler, Donald J.	40
Hooker, James E.	161	Kilpatrick, S. James, Jr.	122
Hopkins, Bette L.	57	Kimbrough, T. Daniel	28
Hopper, Elizabeth	107	King, Mary E.	131
Hopper, Gary	78	Kinney, James J.	271
Hornbuckle, Phyllis A.	40	Kissinger, Jeanette F.	232
Hossaini, Ali A.	131	Kline, Berry J.	239
Howorka, Mamiko V.	139	Kline, Edward S.	121
Hsu, Hsiu-Sheng	125	Klosky, J. Michael	139
Hubbard, Elbert W.	139	Kobos, Robert K.	31
Huf, Ernst G.	129	Koehler, Richard	97
Hull, Rita P.	139	Koerin, Beverly B.	242

288 Board, Administration, and Faculty.

Kolevzon, Michael S.	242	May, Everette L.	127
Koplin, Bruce M.	88	Mayer, David J.	129
Kord, Victor	104	McAuley, William J.	274
Koutrouvelis, Ioannis A.	35	McClung, J. Ross	120
Krieg, Richard J.	120	McCowan, Sara M.	28
Kugler, Roger	97	McCullough, James P.	40
Kurtulus, Ibrahim S.	139	McDermott, Dennis R.	139
Laban, Lawrence F.	271	McDonald, R. Michael	161
Lamb, Robert G.	127	McDougle, Mary L.	76
Lamb, Robert L.	63	McGovern, Thomas V.	40
Lambert, John D.	139	McGrath, John H., III	46
Lambie, Rosemary A.	203	McLaughlin, Julia	41
Landis, Alan L.	86	McLean, James H.	139
Langston, Donnel	172	McLeod, Alam M.	211, 272
Lassiter, Robert A.	174	McSweeney, Edward A.	242
Lavery, John W.	207	McMillan, James H.	207
Lawton, Marcia J.	174	Mead, Howard R., Jr.	139
Laychock, Suzanne	127	Meganck, Robert J.	96
Leahey, Thomas H.	40	Meggs, Philip B.	96
Leichnetz, George R.	120	Melson, Gordon A.	31
Lensen-Tomasson, Nancy	95	Merchant, Randall E.	120
Levin, Paula F.	46	Merz, Timothy	123, 129
Liberti, Joseph P.	121	Meyer, C. James	92
Lim, Franklin	131	Mikulecky, Donald C.	129
Linder, Fredric I.	207	Millen, Dianne L.	232
Lindsey, Barbara J.	55	Miller, Don M.	139
Lira, Frank T.	41	Miller, Elbert G., Jr.	139
Littman, Bruce H.	125	Miller, Jaclyn	242
Llewellyn, Gerald C.	28, 127	Miller, James B.	105
Lohr, C. Michael	35, 211	Miller, Michael I.	271
Lohuis, Ardyth	97	Miller, W. Gregory, Jr.	131
Lokerson, Jean E.	203	Mills, Richard R.	28
Londoner, Carroll A.	207	Minton, Paul D.	35, 122
Long, James T.	94	Moeser, John V.	183
Longest, George C.	271	Mohanakumar, Thalachallour	125
Loria, Roger M.	125	Moncure, Charles W.	131
Luck, Richard S.	158, 174	Mong, Franz S.F.	120
Luke, Roice D.	67	Montesanti, Adrienne	76
Macrina, Francis L.	125	Moore, Mordean T.	242
Macurik, Kenneth M.	41	Mooz, R. Peter	88
Madge, Gordon E.	125, 131	Morecroft, Josephine F.G.	139
Magennis, Michael J.	76	Morgan, James P.	161
Mahoney, John M.	40	Morgan, John	41
Malcan, Jay W.	161	Morris, J. Richard	35
Mandeli, John P.	35	Morse, Charlotte C.	271
Mangine, Robert E.	63	Moss, Jon	41
Mangum, A. Bryant	271	Moszer, Max	139
Marciano-Cabral, Francine	125	Munjas, Barbara A.	232
Marcis, John G.	139	Munson, Albert E.	125, 127
Maricle, Kenneth E.	139	Murray, Byron K.	125
Mark, Barbara A.	67, 232	Murray, Robert P.	97
Marlow, Craig H.	94	Musgrave, Gary E.	127
Marolla, Joseph A.	46	Myers, Barbara J.	40
Marrion, Melissa	97	Myers, Donald W.	139
Martin, Bernard M.	104	Nan, George	95
Martin, Billy R.	127	Nakonecza, Irene	131
Martin, E. Davis, Jr.	174	Nance, Walter E.	123
Martinez-Carrion, Marino	121	Narasimhachari, Nedathur	127
Master, Sherman	41	Nathan, Gail	105
Maurer, Patti A.	57	Nelson, Craig F.	57

Nelson, Lynn D.	46	Porter, Joseph H.	41
Neville, Ann M.	57	Povlishock, John T.	120
Newdick, Richard L.	107	Poynor, Wesley J.	239
Newlin, Dika	97	Pratt, LeEtta	210
Newton, Roberta A.	63	Pratt, Michael D.	139
Noble, Mary Anne	232	Price, Steven	129
North, Harold, E.	106	Priebe, Richard K.	271
Norville, Jerry L.	67	Putney, James W., Jr.	127
Norwood, Peggy	41	Quarterman, Dale	95
Odom, Donna C.	55	Quattropiani, Steven L.	120
Oehler, John S., Jr.	211	Qureshi, Ghulam D.	131
Olds, Philip R.	139	Rademaker, Analie J.	232
Olgas, Marya	232	Ramey, Walter S.	207
Oliver, Robert B.	158, 166	Rao, Gopala U. V.	129
Olmosk, Kurt E.	139	Rasnic, Carol D.	139
Olsho, Lynn W.	41	Raychowdhury, Pratip N.	35
Olson, Sandra K.	41	Ready, Keith F.	172
O'Neal, Charles H.	125	Redwine, Fay E.	123
Orelove, Fred P.	203	Reed, Daisy F.	211
Osby, William J.	183	Reeves, Daniel	86
Osgood, Nancy J.	274	Regelson, William	125
O'Toole, Dennis M.	139	Reilly, Robert J.	139
Ottenbrite, Raphael M.	31	Renick, Charles C.	106
Ouchi, Akira	96	Repp, Eleanor C.	232
Owers, Noel O.	120	Reynolds, Elizabeth R.	271
Ozmon, Howard A.	207	Reynolds, John D.	28
Pace, Laurence A.	88	Reynolds, Ronald P.	172
Pagels, John F.	28	Rezba, Richard J.	211
Pak, Chong M.	158, 166	Richard, Alfred J.	238
Palcanis, Kent	3	Richardson, Judy S.	211, 272
Palen, J. John	46	Ridgway, Ellis B.	129
Pang, David C.	129	Riehl, Julian W.	139
Parham, Iris A.	41, 274	Rimler, George W.	139
Park, Mary Lou	207	Ripley, Curtis	92
Parker, James W.	107	Risatti, Howard A.	88
Parker, Lorraine B.	35	Rizzo, William B.	123
Patrick, Graham A.	127	Robinson, Susan E.	127
Payton, Otto D.	63	Rogers, Kenneth S.	121
Pearce, C. Glenn	139, 207	Romaniuk, Jean G.	274
Peck, Ted	41	Romaniuk, Michael	274
Peed, Steven	41	Rosecrans, John A.	128
Pendleton, James D.	271	Rosenblum, William I.	131
Pennington, Jude C.	210	Rossiter, Louis F.	67
Pentico, David W.	139	Roth, Edna F.	242
Perlman, Stephen M.	46	Rubin, Ronald P.	128
Perry, Regenia A.	88	Ruch, Charles P.	203
Personius, Walter J.	63	Ruddy, Shaun J.	125
Peterson, Darrell L.	121	Rugg, Robert D.	183
Pfeifer, Carl	97	Ruggiero, John S.	236
Phibbs, Paul V., Jr.	125	Rule, Warren R.	174
Philbrick, Pamela M.	94	Russell, Dojelo C.	242
Phillips, James E.	88	Russell, Milo F.	105
Pieper, Alice M.	211	Ryan, Lanny J.	139
Pierpaoli, Paul G.	239	Salley, John J.	2
Pike, Richard T., Jr.	107	Sange, Gary R.	271
Pittman, Roland N.	129	Sauer, Debbie	55
Poland, James L.	129	Sauer, Ronald L.	55
Pollak, Theresa	105	Saunders, David N.	242
Poole, Dennis L.	242	Saxton, Dorothy P.	57

290 Board, Administration, and Faculty.

Scalin, Charles	96	Smith, David J.	271
Scanlan, Michael J.	28	Smith, Elske v.P.	23
Schatzki, Peter	131	Smith, Harold L.	239
Schedler, David A.	36	Smock, Leonard A.	28
Schenkein, Harvey A.	125	Sneden, Albert T.	31
Schenker, Sandra L.	97	Snellings, Eleanor C.	139
Schexnider, Alvin J.	158, 183	Soine, William H.	238
Schiltz, Jack H.	210	Sommer, Sandra R.	55
Schirch, LaVerne G.	121	Sorensen, Vibeke	96
Schmeelk, John F.	36	Southard, Jeffrey C.	192
Schneider, Frederick C.	203	Sparks, Howard L.	203
Schneider, Robert L.	242	Spaulding, Margaret R.	232
Schook, Lawrence B.	125	Spede, Edward C.	139
Schrieberg, Charlotte S.	243	Spencer, Nancy J.	41
Schroeder, Johanna E.	94	Spencer, Robert F.	120
Schulz, Peter	183	Sperry, John B.	139
Schumacher, Salley A.	207	Spinelli, Michael A.	140
Schwartz, Martin S.	243	Spring, Marietta	140, 207
Schwartzbaum, Allan M.	46	Stein, Barry E.	129
Schwieder, Arthur W.	203	Stern, Christa E.	232
Scotch, Bernard C.	243	Stevenson, James A.	120
Scott, Larry	36	Stewart, Jennifer K.	28
Scott, Robert B.	131	Stewart, William R.	56
Scully, Diana H.	46	Stolberg, Arnold L.	141
Scura, Dorothy M.	271	Stone, Stephen E.	210
Seaberg, James R.	243	Strandberg, Warren D.	207
Seaton, Jennie D.	83	Strauss, Sarah S.	232
Segal, Florence Z.	243	Strommer, Joan	95
Seibel, Hugo R.	120	Strong, Stanley R.	41
Seidel, Steven R.	36	Stubbins, James F.	239
Seidenberg, Arthur J.	28	Studer, Kenneth E.	46
Seipel, Joseph H.	106	Stump, Billy L.	31
Seyfarth, John T.	203	Su, Syang	31
Shadomy, H. Jean	125, 131	Susskind, Brian M.	125
Shadomy, Smith	125, 131	Sutherland, John W.	140
Shalenko, Paul C.	76	Swyers, William R.	211
Sharman, Charles C.	203	Szakal, Andras K.	120
Sharp, David E.	131	Szari, Louis J.	107
Sharp, Nicholas A.	270, 271	Szumski, Alfred J.	129
Sharshar, Abdelaleem M.	139	Tarter, Martin A.	211, 272
Shaw, J. Michael	121	Tauer, Kathleen M.	232
Shelton, Keith R.	121	Taylor, Dean	41
Shenoy, Rom	41	Taylor, Robert D., Jr.	140
Sherron, Ronald H.	207	Tennant, Donald	97
Shiel, Fergus O'M.	131	Terner, James	31
Shillady, Donald D.	31	Tew, John G.	125
Shin, Tai S.	139	Thomas, Edwin R.	41
Shipley, Patricia L.	125	Thomas, Ronald B.	97
Sholley, Milton M.	120	Thompson, Nancy K.	92
Shukla, Ramesh K.	67	Tompson, Thomas W.	140
Silliman, Christopher	92	Thornton, Jack E.	140
Silver, Christopher	183	Tipton, Robert M.	41
Silvers, Stuart J.	31	Tisinger, Betty	86
Singer, Mark J.	243	Tisserat, Barbara	105
Sitarz, Anne	41	Tondkar, Rasoul H.	140
Sleeth, Randall G.	139	Topich, Joseph A.	31
Smetana, Frantisek	97	Townsend, J. Ives	123
Smith, Alfred L., Jr.	139	Tucker, John R.	36
Smith, Charles H.	139	Tucker, Woodie L.	140, 207

Turpin, William H.	25	Whitesell, J. Edwin	271
Turshen, I. Jeffrey	140	Wiecking, David K.	67
Tyzenhouse, Phyllis S.	232	Wijnholds, Heiko deB.	140
Underwood, J. William, III	174	Williams, J. Sherwood	46, 274
Vacca, Richard S.	203	Willis, H. David	140
Vallarino, Lidia M.	31	Wilson, Howard B.	140
Van de Walle, John A.	211	Windridge, Graham C.	239
Van Tuyle, Glenn C.	121	Winebrenner, Daniel K.	92
Van Winkle Lester	106	Winters, Lawrence J.	31
VanSant, Anna F.	63	Wise, Michael S.	172
Van't Riet, Bartholomeus	239	Wist, Abund O.	129
Vennart, George P.	131	Witherspoon, John M.	67
Vining, Jay C.	76	Witorsch, Raphael J.	129
Vlahcevic, Sonia K.	97	Wolf, Barry	123
Walker, Ruby C.	243	Wolfe, Eleanor	57
Wan, Thomas T. H.	67	Wompieriski, Claire E.	243
Warren, Charlotte	232	Wood, D. Robley, Jr.	140
Wasserman, Albert J.	128	Wood, James A.	36
Watlington, Charles	3	Wood, John H.	239
Watson, Herbert T.	76	Wood, Judy W.	203
Watts, Janet H.	57	Woodlief, Ann M.	271
Webb, Stanley R.	28, 131	Woods, Lauren A.	128
Wehman, Paul H.	203	Worthington, Everett L.	41
Weinstein, Michael P.	28	Wright, H. Toni	121
Welch, Rizpah L.	203	Wright, Jackson T., Jr.	128
Wells, Mabel G.	243	Wright, James	86
Welshimer, Herbert J.	125	Wright, Keith C.	174
Wergin, John F.	166	Wynne, A. James	140
WestKaemper, Richard B.	239	Yarowsky, Morris	105
Wetton, Phillip S.	105	Yingling, Doris B.	232
Wetzel, James N.	140	Yoo, Jang H.	140
White, C. Eugene	236	Yung, Ringo	94
White, Kimber L., Jr.	125	Zaret, Esther S.	211
Whitlock, A. Gaynelle	203	Zehner, Zendra E.	121

Index

Academic Regulations, General	11	Business, Graduate Programs in	135
Accountancy, Master of	140	Business, School of	134
Accreditation	1	Business, School of, Admission Requirements	136
Add/Drop	14	Cancellation of Registration	12
Administration	282	Center for Public Affairs	189
Administration of Justice, Department of	160	Change in Registration	13
Admission Requirements	9	Change of Discipline	13
Admissions	9	Chemistry, Department of	31
Advising	11	Community and Public Affairs, Programs in	156
Aging Studies	278	Community and Public Affairs, School of	156
Allied Health, Courses in	55	Community and Public Affairs, School of, Admission Requirements	156
Allied Health, Graduate Programs in	54	Computer Science, Certificate Program in	37
Allied Health, School of	53	Computer Science, Courses in	39
Anatomy, Department of	120	Computing and Information Resources	6
Application	8	Counseling	18
Application Procedures	10	Course Interpretation	20
Art Education, Department of	86	Course Numbering	20
Art History, Department of	88	Crafts, Department of	92
Arts, Graduate Programs in	82	Creative Writing, Program in	33
Arts, School of the	82	Credits Required for Graduation	15
Arts, School of the, Admission Requirements	83	Degree Requirements	14
Attendance and Continuance Policies	12	Delinquent Accounts	7
Automobiles	19	Design, Master of Fine Arts in	93
Basic Sciences, Graduate Programs in	112	Economics, Master of Arts in	140
Basic Sciences, Departmental Research Interests	118	Education, Graduate Programs in	194
Basic Sciences	112	Education, School of	192
Basic Sciences, School of, Admission Requirements	113	Education, School of, Admission Requirements	194
Biochemistry, Department of	121	Educational Services, Division of	202
Biology, Department of	28	Educational Studies, Division of	207
Biostatistics, Department of	122	English, Department of	271
Board of Visitors	282	Entrance Examinations	10
Business Administration, Master of	141	Expenses	6
Business, Master of Science in	142		

Faculty	284	Painting and Printmaking, Department of	104
Financial Assistance	7	Pathology, Department of	131
Geriatric Physical Therapy, Program in	277	Pharmaceutical Chemistry,	
Gerontology, Program in	274	Department of	238
Grade-Point Average	16	Pharmacy, Graduate Programs in	236
Grade Reports	16	Pharmacy and Pharmaceutics,	
Grade Review Procedure	16	Department of	239
Grading System	16	Pharmacy, School of	236
Graduate Degrees	3	Pharmacy, School of, Admission	
Graduate Studies, School of	2	Requirements	237
Gymnasiums	19	Photography, Department of	95
Health Administration, Department of	67	Physical Therapy, Department of	63
Health and Physical Education,		Physiology and Biophysics,	
Division of	210	Department of	129
Health Services and Insurance	18	Placement Services	18
Housing	18	Planning Information Systems,	
Human Genetics, Department of	123	Program in	142
Humanities and Sciences, College of	23	Postal Service	19
Humanities and Sciences, College of,		Program Management, Program in	145
Admission Requirements	24	Psychology, Department of	40
Humanities and Sciences, College of,		Public Administration, Department of	166
Graduate Programs in	23	Rebates, Refunds	7
Identification Cards	19	Recreation, Department of	172
Identification of Symbols	20	Rehabilitation Counseling, Department of	174
Interdisciplinary and Cooperatively		Repeated Courses	16
Offered Graduate Degree—		Request for Refund	7
Gerontology	274	Research	5
Interdisciplinary and Cooperatively		Residence	6
Offered Graduate Degree—Master of		Residency, Administrative	70
Interdisciplinary Studies	270	Rules and Regulations	19
Interdisciplinary and Cooperatively		Sculpture, Department of	106
Offered Graduate Degree—Social		Social Policy and Social Work,	
Policy and Social Work	251	Program in	251
Interdisciplinary and Cooperatively		Social Work, Programs in	244
Offered Graduate Program—Aging		Social Work, School of	242
Studies	278	Social Work, School of, Admission	
Interdisciplinary and Cooperatively		Requirements	244
Offered Graduate Program—English	271	Social Work Specializations	247
Interdisciplinary and Cooperatively		Sociology and Anthropology,	
Offered Graduate Program—		Department of	46
Geriatric Physical Therapy	277	Statistical Consultation Resources	6
Interior Design, Department of	94	Statistics, Courses in	40
International Students	11	Student Load	12
Libraries	4	Student Services	17
Mass Communications, School of	25	Taxation, Master of	144
Master of Interdisciplinary Studies	270	Teacher Education, Division of	210
Mathematical Sciences, Department of	35	Time Limit for Completion of Degrees	15
Mathematics, Courses in	37	Theatre, Department of	106
Medical Technology, Department of	55	Transcripts	17
Microbiology and Immunology,		Transfer Credits	13
Department of	124	Tuition and Fees	6
Music, Department of	97	Types of Admission	9
Nursing, Programs in	226	University, General Information	1
Nursing, School of	226	University Graduate Council	2
Nursing, School of, Admission		Urban Studies and Planning,	
Requirements	227	Department of	182
Occupational Therapy, Department of	57	Veteran Services	9
Off-Campus Graduate Instruction	4	Withdrawals from the University	12
Organizations	19	Withdrawals, Health Related	12

PRIVACY RIGHTS OF PARENTS AND STUDENTS

Provisions for the release of information concerning students, including the rights of access by students and others to education records maintained by Virginia Commonwealth, are as follows:

A. Release of Personally Identifiable Student Information

It is the policy of Virginia Commonwealth University that "personally identifiable information," other than "directory information" from a student's education records, will not be disclosed, without the written consent of the affected student, to any party or organization which does not have a legitimate right of access to the information. The persons or organizations which are deemed to have legitimate rights of access are

1. Virginia Commonwealth University officials and staff, and university academic excellence and honor societies, fraternities, and sororities which have a designated faculty advisor. Requests from such officials or organizations shall be directed to the appropriate office and proper identification will be required. Access will not be granted unless it is determined that the person or organization is deemed to have a legitimate educational interest, which is defined as having some reasonable relationship to instruction, supervision, administration, or other similar responsibility of this university.
2. Appropriate persons in connection with a student's application for or receipt of financial aid.
3. Appropriate federal or state education authorities.
4. Organizations conducting studies for, or on behalf of, Virginia Commonwealth University, for the purpose of assisting the university in the accomplishment of its stated mission and purpose; provided, however, that such information will be used only by such organizations and will be destroyed when no longer needed for the intended purpose. The director of the Office of Enrollment Services approve requests of this nature.
5. Accrediting organizations.
6. Parents of a dependent student, as defined in Section 152 of the Internal Revenue Code. (Note: Husbands and wives are not entitled to obtain records of their spouses without the consent of the spouse, regardless of dependency.)
7. In compliance with judicial order or subpoena, after the university has made a reasonable effort to notify the student.
8. Appropriate person in connection with an emergency if such knowledge is necessary to protect the health or safety of a student or other persons.

NOTE: Custodians of student records will maintain a record of all individuals and agencies which have requested or obtained access to a student's record (except those listed in A(1) and (6) above). This record will specifically indicate the legitimate interest that

the person or agency had in obtaining the information, and the information made available will be limited to that necessary to satisfy such demonstrated needs. In addition, custodians will, prior to the release of "personally identifiable information" from a student's record, obtain assurances that the information will be used only for the purpose for which the original disclosure is made and that there will be no further disclosure without the student's consent.

B. Definitions:

1. **Education Records.** "Education records" are defined as those records, files, documents, and other materials which (1) contain information directly related to a student; and (2) are maintained by Virginia Commonwealth University or by a person acting for the university. They do *not* include (1) personal notes and other such information which is in the sole possession of the maker and which is not accessible or revealed to any other individual; (2) records available only to law enforcement personnel; (3) employment records; (4) medical, psychological, and psychiatric records which are disclosed only to individuals providing treatment and which can be made accessible to the student's personal physician or other appropriate person of the student's choice; or (5) information collected on a person who is no longer a student at Virginia Commonwealth University and which pertains to activities or accomplishments that occurred after the person ceased to be a student at VCU (e.g., records of the accomplishments of alumni). A list of education records maintained by the university and the location thereof is available in the Office of Enrollment Services.
2. **Student.** A "student" is any person who is or has been enrolled at Virginia Commonwealth University, and with respect to whom education records are maintained by the university, and includes a parent of a "dependent student," as defined in Section 152 of the Internal Revenue Code.
3. **Directory Information.** "Directory information" includes the following: a student's name, mailing address and telephone number, local address and telephone number, semesters of attendance, load status (full- or part-time), date of admission, date of graduation, school, major and minor fields of study, whether or not currently enrolled, classification (freshman, sophomore, etc.), type of degree being pursued, honors, awards, degree received, weight and height of members of athletic teams, and whether the student has participated in officially recognized activities and sports sponsored by the university. At the time of registration, and not later than 14 days after the beginning of a term, the student may submit to the Office of Enrollment Services/Academic Records a written request that directory information pertaining to that student not be released. This request is ef-

fective only for the one semester and must be renewed at the beginning of each academic term.

4. **Access.** Access to an education record signifies the right to inspect one's records and includes the right to obtain copies of that record.

C. Procedure for Gaining Access to Education Records

To obtain access to one's records, a student must advise the custodian of the records of his or her desire to examine such records. If desired, the student may also request an explanation and/or copies of such records. A reasonable fee will be charged for copies provided. Examination will be permitted under conditions which will prevent alteration or mutilation of the record. A student must present proper identification upon the request of the custodian of the records.

If the student believes the record content to be inaccurate, he or she may submit a request to amend the record. Normally, such matters will be satisfactorily resolved in the course of informal discussions with the student. When agreement cannot be reached, a written challenge as to the accuracy of the record may be presented to the record custodian, who will provide a response to the student within a period of 45 days. If the student's request is not granted, the student will also be advised of his or her right to a hearing. The student may then submit a written request for a hearing to the dean of student life, who will refer the matter to the University Hearing Board. The normal procedures established for the Hearing Board will govern such appeals. If the appeal is denied, the student may submit to the University

Hearing Board a written explanation to be inserted into the record.

NOTE: This procedure does not provide for a hearing to contest an academic grade.

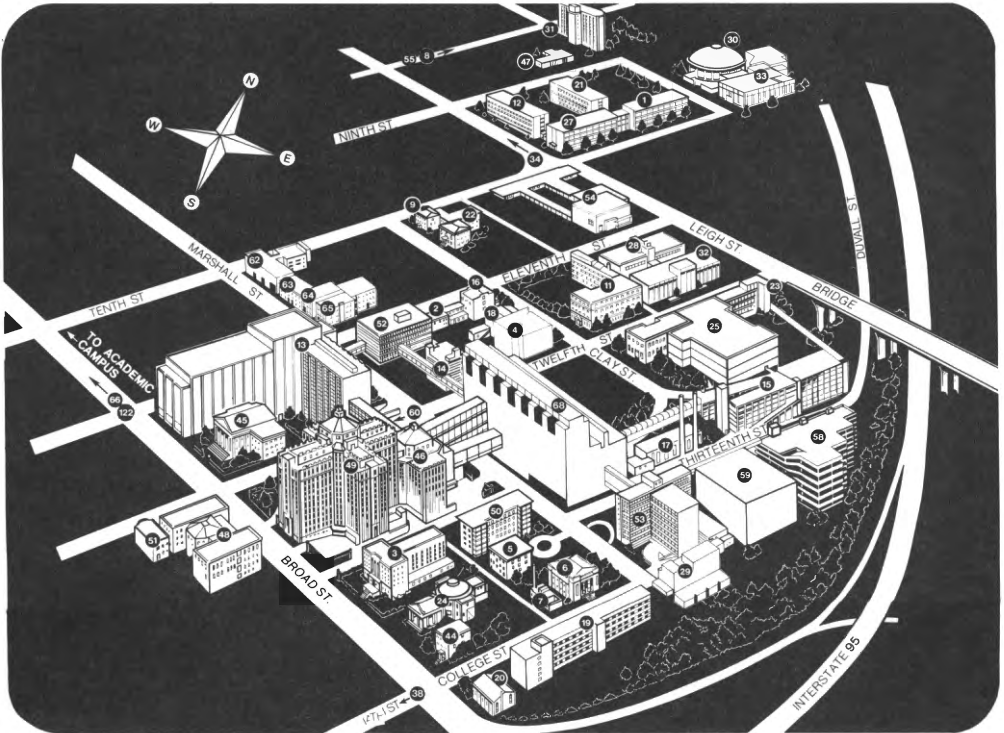
D. Limitation on Rights of Access

A student is not entitled access to:

1. Financial records of parents or any information therein.
 2. Confidential letters and statements of recommendation which were placed in the education records prior to January 1, 1975, as well as those received subsequent to that date when the student has specifically waived, in writing, his or her right to examine or review said letter(s) or statement(s).
 3. Medical and/or psychiatric records, when the attending physician has made a part of the record a written statement that in his or her opinion, the review of the records by the person who is the subject of the record would not be in the best interests of said person.
- E.** The university retains all rights to the student's academic record and may withhold transcripts of the record because of unfulfilled obligations to the university.
- F.** These guidelines are promulgated pursuant to Section 438, Pub. L. 90-247, Title IV, as amended, 88 stat. 571-574 (20 U.S.C. §132g); and the regulations promulgated by the Secretary of Health, Education, and Welfare as published in the *Federal Register* on Thursday, June 17, 1976. A student who feels that the university has failed to comply with applicable regulations is entitled to file a complaint with the Secretary of Health, Education, and Welfare.

Code Building

- | | | |
|---|--|---|
| 1 Bear Hall, 10th & Leigh St. | 20 Randolph Minor Annex, 301 College St. | 48 South Hospital, 1201 E. Broad St. |
| 2 Personnel Annex Building, 411 N. 11th St. | 21 Rudd Hall, 10th & Leigh St. | 49 West Hospital, 1200 E. Broad St. |
| 3 Nursing Education Building, 1220 E. Broad St. | 22 Sheltering Arms, 1008 E. Clay St. | 50 East Hospital, 1214 E. Marshall St. |
| 4 Pharmacy/Pharmacology Building, 410 N. 12th St. | 23 Strauss Research Laboratory, 527 N. 12th St. | 51 Lewis House, 223 Governor St. |
| 5 Dooley Building, 1225 E. Marshall St. | 24 Monument Church, 1224 E. Broad St. | 52 Nelson Clinic, 401-09 N. 11th St. |
| 6 Egyptian Building, 1223 E. Marshall St. | 25 Tompkins-McCaw Library, 509 N. 12th St. | 53 North Hospital, 1300 E. Marshall St. |
| 7 Pathological Incinerator, 316 College St. | 26 Toxicology Laboratory & Rodent House, 9 N. 13th St. | 54 Virginia Treatment Center, 515 N. 10th St. |
| 8 Physical Plant Shops Building, 659 N. 8th St. | 27 Warner Hall, 10th & Leigh St. | 55 Richmond Academy of Medicine, 1200 E. Clay St. |
| 9 Leigh House, 1000 E. Clay St. | 28 Wood Memorial Building, 521 N. 11th St. | 58 Faculty - Staff Parking Deck (Lot D), 515 N. 13th St. |
| 10 McGuire Hall, 1112 E. Clay St. | 29 Cancer Center, E. Marshall & College St. | 59 MCV Hospital Supply & Distribution Building, 403 N. 13th St. |
| 11 McRae Hall, 10th & Leigh St. | 30 Larrick Student Center, 641 N. 8th St. | 60 George Ben Johnston Auditorium, 305 N. 12th St. |
| 12 Sanger Hall, 1101 E. Marshall St. | 31 Cabaniss Hall, 600 N. 8th St. | 62 VMI Building, 1000 E. Marshall St. |
| 13 Ambulatory Care Center, 408 N. 12th St. | 32 Lyons Dental Building, 520 N. 12th St. | 64 Samuel Putney House, 1010 E. Marshall St. |
| 14 MCV/VCU Visitor Parking Deck, 1220 E. Clay St. | 33 Gymnasium, 9th & Leigh St. | 65 Stephen Putney House, 1012 E. Marshall St. |
| 15 University Personnel Employment Office, 1101 E. Clay St. | 34 Animal Research Facility, Hanover County | 66 Holiday Inn, 301 W. Franklin St. |
| 16 Central Heating & Power Plant, 400 N. 13th St. | 38 Consolidated Lab Building, 9 N. 14th St. | 68 New MCV Hospital, 1200 E. Marshall St. |
| 17 MCV Alumni Building, 1105 E. Clay St. | 44 Newton House, College & Broad St. | 122 Richmond Plaza Building, 111 S. 7th St. |
| 18 Randolph Minor Hall, 307-15 College St. | 45 Old Student Center, 323 Broad St. | |
| | 46 A.D. Williams Memorial Clinic, 1201 E. Marshall St. | |
| | 47 VCU Day Nursery, 610 N. 9th St. | |

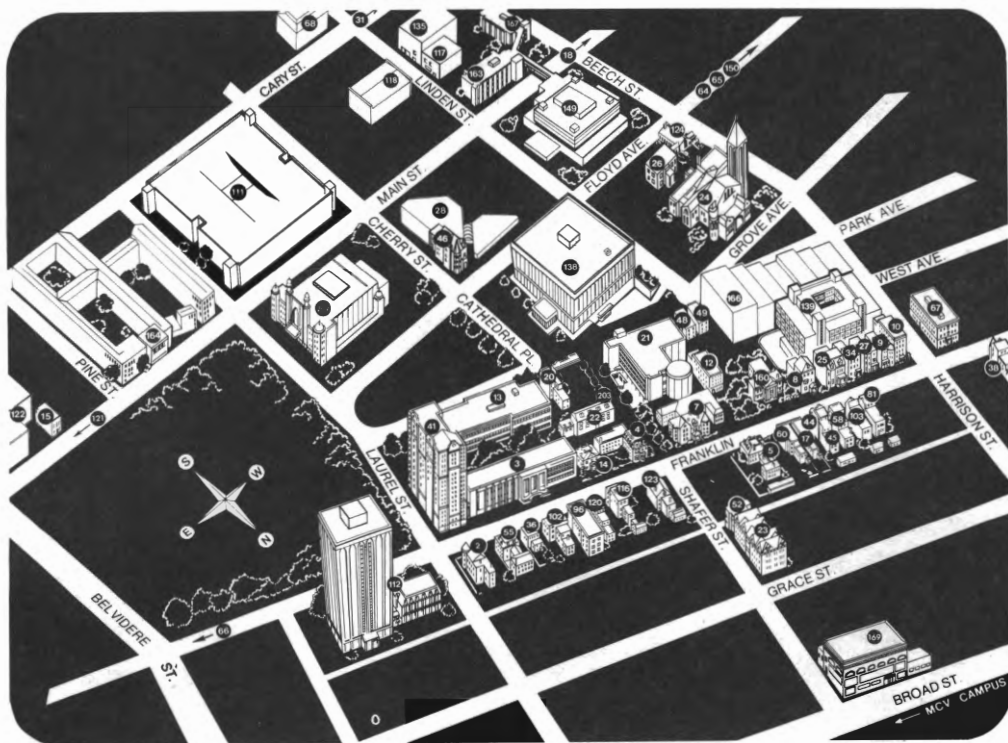


Medical College
of Virginia
Campus Locator



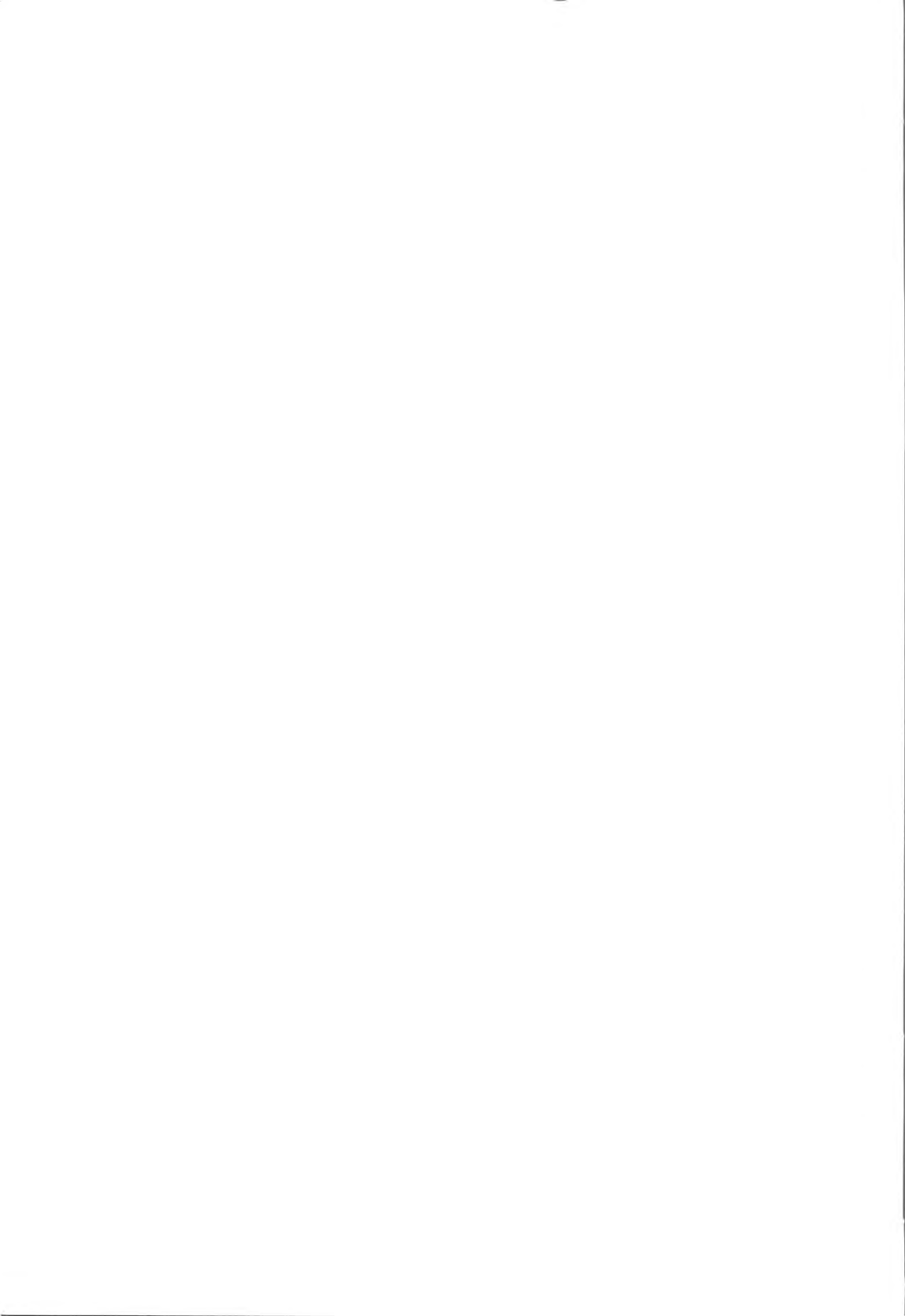
Code Building

- | | | |
|---|--|---|
| 2 Williams House, 800 W. Franklin St. | 31 1004 W. Cary St. | 118 25 S. Linden St. |
| 3 Franklin Street Gymnasium,
817 W. Franklin St. | 34 Bowe House, 917 W. Franklin St. | 120 Harrison House, 816 W. Franklin St. |
| 4 Founders Hall, 827 W. Franklin St. | 36 808 W. Franklin St. | 121 Planning & Finance Building,
327 W. Main St. |
| 5 President's House, 910 W. Franklin St. | 38 Meredith House, 1014 W. Franklin St. | 123 Blanton House, 826-28 W. Franklin St. |
| 7 Ginter House, 901 W. Franklin St. | 41 Johnson Hall, 801 W. Franklin St. | 124 1022 Floyd Ave. |
| 8 Anderson House, 913 W. Franklin St. | 44 Millhiser House, 916 W. Franklin St. | 135 Physical Plant Shops, 10 S. Linden St. |
| 9 Scherer Annex, 921 W. Franklin St. | 45 916 W. Franklin St. (rear) | 138 James Branch Cabell Library,
901 Park Ave. |
| 10 Scherer Hall, 923 W. Franklin St. | 46 Sitterding House, 901 Floyd Ave. | 139 Pollak Building, 325 N. Harrison St. |
| 11 918 W. Grace Street | 52 Center for Improving Teaching
Effectiveness, 310 N. Shafer St. | 149 School of Business, 1015 Floyd Ave.—
Business School Auditorium,
14 N. Linden St. |
| 12 Anderson Gallery, 907½ W. Franklin St. | 55 White House, 806 W. Franklin St. | 150 10 N. Brunswick St. |
| 13 Life Science Building, 816 Park Ave. | 58 McAdams House, 918 W. Franklin St. | 160 909 W. Franklin St. |
| 14 Ritter-Hickok House, 821 W. Franklin St. | 60 Stagg House, 912 W. Franklin St. | 163 Oliver Hall - Physical Sciences Wing,
1001 W. Main St. |
| 17 Brown House, 914 W. Franklin St. | 64 1128 Floyd Ave. | 164 Apartment Dormitory, 711 W. Main St. |
| 18 1322-24 W. Main St. | 65 107 N. Morris St. | 166 Music and Theatre Building,
922 Park Ave. |
| 20 Adkins House, 824 Park Ave. | 66 Holiday Inn, 301 W. Franklin St. | 167 Oliver Hall - Education Wing,
1015 W. Main St. |
| 21 Hibbs Building, 900 Park Ave. | 67 Raleigh Building, 1001 W. Franklin St. | 169 1001 W. Broad St. |
| 22 Shafer Street Playhouse,
221 N. Shafer St. | 68 Cary Street Gym, 911 W. Cary St. | 202 Mosque |
| 23 Lafayette Hall, 312 N. Shafer St. | 81 Buford House, 922 W. Franklin St. | 203 Ask-It, Shafer St. |
| 24 VCU Music Center, 1015 Grove Ave. | 96 Franklin Terrace, 812-14 W. Franklin St. | |
| 25 Decatur-Axtell House,
915 W. Franklin St. | 102 Hunton House, 810 W. Franklin St. | |
| 26 Education Annex, 109 N. Harrison St. | 103 Valentine House, 920 W. Franklin St. | |
| 27 Stark House, 919 W. Franklin St. | 111 VCU Parking | |
| 28 Student Commons, 907 Floyd Ave. | 112 Rhoads Hall, 710 W. Franklin St. | |
| 30 620 N. Lombardy St. | 116 Bird House, 820 W. Franklin St. | |
| | 117 Physical Plant Warehouse,
6 S. Linden St. | |



Academic
Campus
Locator





Virginia Commonwealth University
1012 East Marshall Street
Richmond, VA 23298

Special Fourth Class Rate

